

Railway Age

August 22, 1942

Transportation
Library

Founded in 1856

AUG 25 1942

United FOR Victory



GENERAL MOTORS
LOCOMOTIVES

THIS war will be decided by the combined fighting forces on land, on sea and in the air. All America is united to produce and deliver to the many fighting fronts, with ever-increasing speed, the equipment, materials and supplies which are so vital for VICTORY... Modern mechanized warfare requires maximum production by heavy industries and heavy industries must be served adequately by the railroads. Transportation is the center around which the entire war effort functions and thus far

the railroads have done a grand job. However, the enormous volume of traffic and the higher speeds with which it is being handled result in increased wear and tear on rolling stock and track facilities and therefore demand a higher degree of maintenance to maintain top efficiency... General Motors Diesel Road Locomotives are making it possible for railroads to handle increased tonnage at higher speeds on existing track facilities and with marked reductions in operating costs.

TRANSPORTATION IS VITAL TO VICTORY

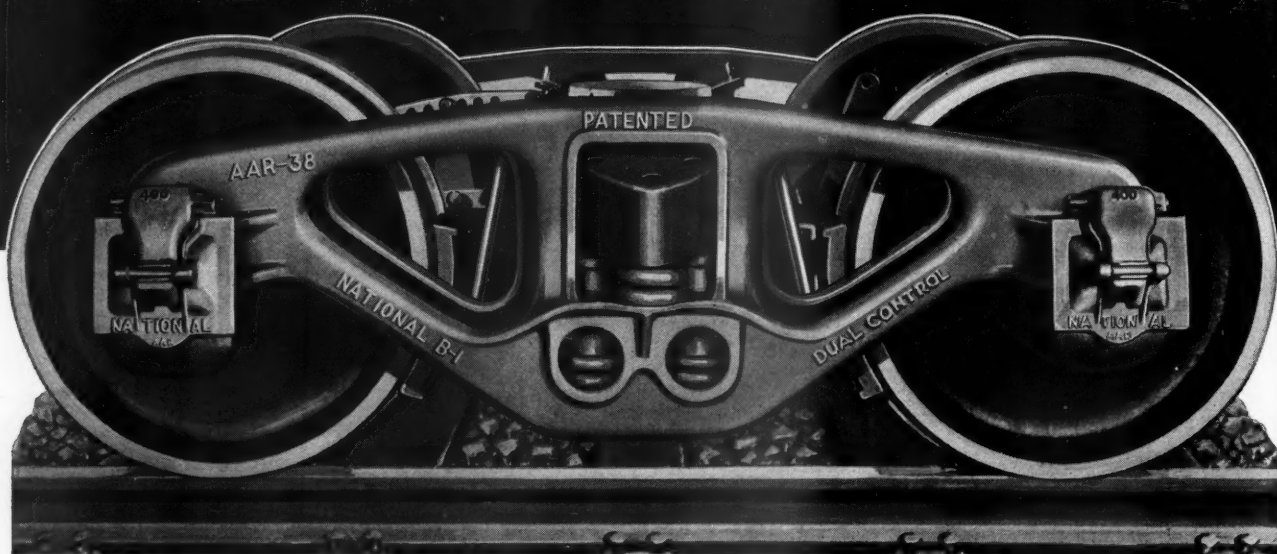
TRANSPORTATION LIBRARY

ELECTRO-MOTIVE DIVISION

GENERAL MOTORS CORPORATION

LAGRANGE, ILLINOIS, U.S.A.

NATIONAL B-1 TRUCK WITH DUAL CONTROL



SMOOTH RIDING AT HIGH SPEED
 SPRING OSCILLATIONS CONTROLLED
 SELF SQUARING
 SPRING PLATES NOT REQUIRED
 NO SPRING LOSS
 QUICK WHEEL CHANGE
 LOWER MAINTENANCE COST
SPECIFY NATIONAL B-1 TRUCKS WITH DUAL CONTROL

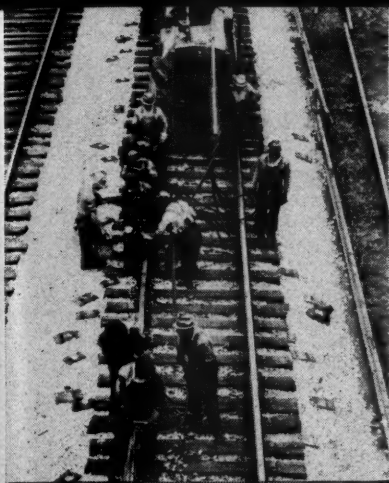
NATIONAL MALLEABLE AND STEEL CASTINGS CO

General Offices: CLEVELAND, OHIO

Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco
 Works: Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.

Canadian Representatives: Railway and Power Engineering Corporation, Ltd., Toronto and Montreal

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price \$6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 113, No. 8.



Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered U.S. Patent Office.

Vol. 113

August 22, 1942

No. 8

In This Issue

PUBLISHED EACH SATURDAY
BY THE SIMMONS-BOARDMAN
PUBLISHING CORPORATION, 1309
NOBLE STREET, PHILADELPHIA,
PA., WITH EDITORIAL AND
EXECUTIVE OFFICES AT 30
CHURCH STREET, NEW YORK,
N. Y., AND 195 W. ADAMS STREET,
CHICAGO, ILL.

WASHINGTON, D. C.: 1081 NATION-
AL PRESS BUILDING. CLEVELAND:
TERMINAL TOWER. SEATTLE:
1039 HENRY BUILDING. SAN
FRANCISCO: 300 MONTGOMERY
STREET, ROOMS 805-806. LOS AN-
GELES: 530 WEST 6th STREET.

SAMUEL O. DUNN, CHAIRMAN.
HENRY LEE, PRESIDENT. ROY
V. WRIGHT, VICE-PRESIDENT AND
SECRETARY. F. H. THOMPSON,
E. T. HOWSON, F. C. KOCH, R. E.
THAYER, H. A. MORRISON, VICE-
PRESIDENTS. J. T. DeMOTT,
TREASURER.

SAMUEL O. DUNN, EDITOR. ROY
V. WRIGHT, MANAGING EDITOR.
ELMER T. HOWSON, WESTERN
EDITOR. JAMES G. LYNE, ASST.
TO EDITOR. C. B. PECK, ALFRED
G. OEHLE, E. L. WOODWARD,
J. H. DUNN, D. A. STEEL, R. A.
DOSTER, H. C. WILCOX, NEAL
D. HOWARD, CHARLES LAYNG,
GEORGE E. BOYD, WALTER J.
TAFT, M. H. DICK, JOHN H. KING,
JOHN S. VREELAND, ARTHUR J.
McGINNIS, J. L. STOVER, C. B.
TAVENNER.

RAILWAY AGE IS A MEMBER OF
ASSOCIATED BUSINESS PAPERS
(A. B. P.) AND AUDIT BUREAU OF
CIRCULATIONS (A. B. C.).

SUBSCRIPTIONS, INCLUDING 52
REGULAR WEEKLY ISSUES, AND
SPECIAL DAILY EDITIONS PUBLISHED FROM TIME TO TIME
IN NEW YORK, OR IN PLACES
OTHER THAN NEW YORK, PAY-
ABLE IN ADVANCE AND POSTAGE
FREE. UNITED STATES, U. S.
POSSESSIONS AND CANADA: 1
YEAR, \$6.00; 2 YEARS, \$10.00;
FOREIGN COUNTRIES, NOT IN-
CLUDING DAILY EDITIONS: 1
YEAR, \$8.00; 2 YEARS, \$14.00.
SINGLE COPIES, 25 CENTS EACH.
H. B. McCANDLESS, CIRCULATION
MANAGER, 30 CHURCH STREET
NEW YORK.

S. P. Replaces Obsolete Stations, Improves Operation

Page

296

How this road modernized its passenger and freight facilities at Alhambra, Cal., and Pomona in order to speed traffic and revised its layout at Palo Alto in connection with a grade separation, is set forth in this article.

Outlook for Steam Motive Power

299

Excerpts from an address delivered before the Pacific Railway Club by R. M. Ostermann, Vice-President of the Superheater Company, in which he discusses the relative importance of steam and Diesel motive power.

Traffic Trends Get Close Study on the New Haven

302

Part I of an article telling of the special studies of specific problems carried on by this road which have enabled it to take corrective action in a number of situations and aided its management in making day-to-day decisions with a greater amount of certainty.

EDITORIALS

Railway Equipment Situation	293
Economics of "Labor"	294
Wheat	294
An Ill-Advised Order	295
L. C. L. Car Economy	295

GENERAL ARTICLES

S. P. Replaces Obsolete Stations, Improves Operation	296
Outlook for Steam Motive Power, by R. M. Ostermann	299
Traffic Trends Get Close Study on the New Haven, Part I	302
Rails Now Deliver 60 Per Cent of Eastern Oil Demand	306
Missouri Pacific Office Yields Scrap	309
Truck Co-ordination Saves Cars	310

NEW BOOKS

312

RAILROADS-IN-WAR NEWS

313

GENERAL NEWS

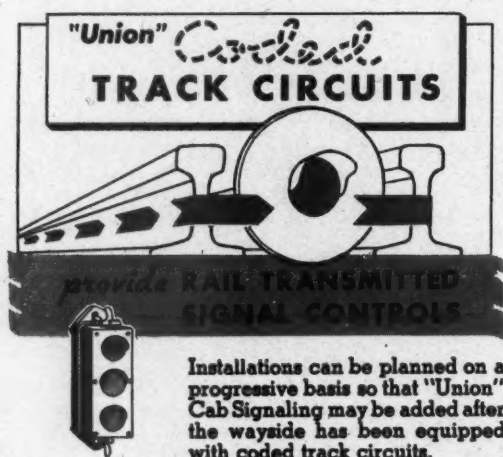
318



The Railway Age is indexed by the Industrial Arts-Index and also by the Engineering Index Service

PRINTED IN U. S. A.

*Are you prepared
for
Bad Weather?*



THIS fall and winter, the railroads must carry a heavier load than ever before. Rail transportation must be maintained at its present high level of efficiency despite handicaps imposed by winter weather. Where the "Union" Coded Track Circuit Control System is in service in automatic block signal territory, one burden is removed from the operating officer's heavy load when he is confronted with emergency conditions. Such installations do much to prevent train delays resulting from signal outages caused by broken line wires as practically all signal controls are rail-transmitted. The continuity of signal operation is protected and maintenance costs are reduced.

UNION SWITCH & SIGNAL COMPANY
SWISSVALE, PA.

NEW YORK

CHICAGO

ST. LOUIS

SAN FRANCISCO

RAILWAY AGE

Railway Equipment Situation

Although the United States has not been invaded, there are now being fought on its soil some of its most important battles. One is the battle of production; another the equally important battle of transportation.

This year's peak of freight traffic is still six weeks ahead; but the railways in August are handling a traffic far exceeding any past fall peak traffic. Ton-miles (revenue and non-revenue) in August will be about 64 billion 400 million—an increase of 67 per cent over August, 1918; of 43 per cent over August, 1929; of 77 per cent over August, 1940; of 31 per cent over August, 1941, and of 26 per cent over the fall monthly record made last October. If traffic increases only as much between August and October as last year, there will be no severe shortages of locomotives or cars this year. But every previous record of efficiency is having to be broken to meet present demands; and some shortages this fall seem unescapable. How close to shortages of equipment the railways are now running is indicated by the following facts:

On July 1, 1941, they had 24,765 freight locomotives of which 3,225 needed repairs and 838 were stored in serviceable condition. On July 1, 1942, they had 24,826 freight locomotives, of which only 1,767 needed repairs and only 593 were stored in serviceable condition. They were intensively using 1,854 more locomotives than in 1941; and the margin of safety represented by those stored or available for repairs was the smallest in history. On the average each locomotive has rendered about 34 per cent more service in the first eight months of this year than last year.

Total freight cars (including those privately-owned) increased between July 15, 1941, and July 15, 1942, from 1,854,673 to 1,969,187, or by 114,514; the number needing repairs was reduced 24,000; and the net increase in serviceable cars was about 140,000, or only 8 per cent. To handle the traffic this necessitated an increase in service per car of 26 per cent. The total car surplus in July, 1941, was about 87,000; at the peak of traffic last October about 40,000; and at the beginning of August this year about 67,000. Principally because of increased loading per car of l. c. l. freight, however, the surplus of box cars had increased from 30,607 in July, 1941, and about 17,000 at the peak last October to about 43,000 early in August, 1942. On the other hand, the surplus of gondola, hopper, coal, coke and ore cars—which declined from 35,884 in July, 1941, to 9,491 in October—was only 6,369 at the beginning of August. There being about 804,000 of such cars, the surplus of them at the time of the last reports was *less than 1 per cent* of their total number and *only one-fourth as great* as the reduction in the surplus of them between July and October, 1941.

We are thus confronted with the practical certainties that this fall the railways will have, first, barely enough freight locomotives, and, second, a shortage of open top cars. How, then, about 1943, when traffic, especially such as ordinarily requires open top cars, is expected to further largely increase? The prospective transportation situation is plain enough; the means of preventing it are plain enough; but is it plain enough that the War Production Board, in not increasing allocations of materials for railway purposes, is acting in the best interest of the nation?

Efficiency
FOR VICTORY

Economics of "Labor"

The railway unions' paper, "Labor", in its August 18 issue, rendered judgment on a number of fundamental economic questions. While not adding significantly to the sum of economic wisdom, its pronouncements cannot safely be ignored by railway management and public relations. What "Labor" says about economic questions is what hundreds of thousands of railway employees believe, because many of them have no other source of economic information and instruction.

"Labor" first takes the New York Times to task for insisting that constantly increasing wages must inevitably bring on price inflation, and accuses it of seeking to keep wages low. It also denounces the Times along with Leon Henderson and "other alleged economists" for contending that "freezing" or taxing wages is necessary to prevent inflation. How much inflation, "Labor" asks, can a man start who receives only \$30 a week?

The answer is: Plenty. If a man receives \$30 a week now—whereas, before the war, he drew only \$20—and you multiply him by two million, you have \$20,000,000 of new "purchasing power" in the market *without any increase of civilian goods* to match that increased "purchasing power." The result is, inevitably, to *bid up the price* of the limited quantity of civilian goods. Such increases in price of goods the quantity of which cannot be increased is inflation.

The only effective way to increase the standard of living (i.e., the *real* wages) of low-paid labor is to increase the quantity of goods available for them to purchase. When their money wages are increased and the quantity of goods they can buy is stationary or diminishing, the only way to equate "purchasing power" and goods is to decrease the value of money—i.e., increase prices. To state this plain fact is not to advocate starvation wages. The nation cannot increase the average standard of living of its people unless and until it can devote its productive facilities to the manufacture of more peace-time goods. Everybody, including the editors of "Labor", knows that this cannot be done while there is a war going on. To give people, on the average, more money (after taxes) to spend while this war lasts than they got before is deceptive hocus-pocus.

Another economic pronouncement in the same issue of "Labor" quotes one Boris Shishkin, "the extremely able economist of the A. F. of L." as pointing out that wages constitute "only 16 per cent of the value of the product at the factory door." From this observation, "Labor" deduces that a 10 per cent increase in wages would add only 1.6 per cent to the labor costs of manufacturers, and that "with output constantly increasing, this insignificant increase could be absorbed without any advance in the price paid by consumers." But the price to the consumer of manufactured goods includes all the wages paid in producing the raw materials and fuel used in manufacturing, and those paid

in manufacturing the goods, in transporting the raw materials, fuel and finished products, and in wholesaling and retailing the finished products.

The preponderant employer of labor today, directly and indirectly, is Uncle Sam. If savings in unit cost of production are brought about by large orders, why not let Uncle Sam get the benefit, in lower prices of the things he buys? The possibility of a higher standard of living for the American people, including wage-earners, is one of the things the nation is fighting to defend. But to try, as "Labor" insists, to provide this higher standard of living *before* its enemies are overcome, is a dangerous diversion. "Labor" is doing its readers a disservice by stressing partisan and groundless arguments to the concealment and confusion of economic reality.

Wheat

A situation that might have developed into an extremely awkward problem for the railways in connection with the movement of this year's wheat crop has been worked out satisfactorily through frank discussion of it at shippers' advisory board meetings and the assistance of the Car Service division of the A. A. R. When harvesting began this year, it quickly became evident that there was no place to store the greater part of the crop, except in makeshift storage. Sufficient publicity was given, however, notably in radio broadcasts staged by the A. A. R., to convey a true picture of the situation to those most vitally concerned—the farmers and the operators of the country elevators.

It was soon apparent that the lack of storage would make necessary the unprecedented step of an embargo on "cash" or "free" grain, and it was suggested that the A. A. R. initiate this control to aid the committee in charge of issuing permits in its efforts to comply with requests from the Department of Agriculture to relieve particularly distressed areas. The A. A. R. at once informed the committees handling the grain shipping permits, however, that, under the law, there was a distinct limitation on the authority of the railroads to discriminate between shippers of "distress" grain and other shippers, for they were required to move grain for any shipper who could prove that it would be unloaded promptly at destination.

The Car Service Division brought the matter to the attention of the Department of Agriculture, and the representatives of that agency reiterated their position that the necessary preference and priority on transportation should be obtained by some means or other for those areas where the harvested wheat was exposed to the greatest danger of deterioration. Whatever the merits or demerits of the "ever-normal granary" plan may be, the fact remains that it has produced a shortage in storage facilities such as never has been experienced before, and, recognizing its responsibility, the Department agreed with the A. A. R. to refer the matter to the Interstate Commerce Commission. The I. C. C.



then issued Service Order No. 80, which gives agents of the commission, at six principal markets, authority to permit the movement of both cash and storage grain into these markets and instructs them to give preference to shipments from those areas where the grain is in greater danger of damage or loss. Under this order, the railways can now assist in accomplishing the end desired in an entirely legal way without becoming involved in charges of discrimination.

In view of the fact that many million bushels of wheat are stored on the ground, or in facilities not adapted for such storage, it is remarkable that not a single complaint has been received as to car supply or transportation. This result was attained through proper publicizing of the fact that the bottleneck was storage—not transportation. The railways individually and the Car Service division of the A. A. R. have done a splendid job in informing the wheat-growing public regarding the facts and avoiding bringing any onus on themselves. Another achievement of supreme importance in this war year is the fact that they have also avoided the storage of wheat in box cars, which are urgently needed elsewhere for more pressing service.

An Ill-Advised Order

On July 13 the War Production Board (order M-126) prohibited the further use of steel for tie irons or anti-splitting devices. It is estimated it will thereby save not more than 3,500 tons of steel annually—the quantity required for the 60,000,000 irons used each year. But a chain of far-reaching developments is started.

During the last quarter century the railways have pioneered in the development of treatment of timber to extend its life and reduce the demands on our forests. By this means they have made practicable the utilization of numerous woods for cross ties that would not be usable otherwise, notably such hardwoods as certain species of red oak, birch, beech and maple.

But the use of these hardwoods has given rise to new problems, among which is that of checking, or splitting, of the timber during seasoning, and treatment to such a degree as to render many ties unfit for use. To overcome this tendency the railways have developed the use of tie irons or anti-checking irons, commonly of C, S, or similar shapes, which are driven across the grain in the ends of the ties. The efficiency of this device has been such that its use has become recognized as good practice by the American Railway Engineering Association, and it is used in all hardwood ties by most railroads.

The railways are now confronted with a serious decline of tie production due to various causes, including the diversion of labor to military service and to defense industries, and the necessity for reorganization of many of the tie producers' operations by reason of the shortage of tires for trucks hauling from the woods.

As a further complication, the government is in the market for ties in quantities variously estimated up to 7,000,000.

Coming as these developments do when the needs of the railways for ties are greater than for more than 10 years, because of the greater wear and tear on tracks by a record traffic, and the more than usual importance of insuring freedom from delays due to weakened track, the necessity of conserving all ties available is evident. Furthermore, it is not to be overlooked that a tie lost through excessive and unrestrained checking during seasoning constitutes a waste not only of the timber but also of the labor involved in its conversion into the tie and of the transportation of that tie to the seasoning yard. And when it is further considered that the elimination of anti-checking irons may bring about a loss of as many as a million such ties in a year, the wisdom of eliminating the allocation of the 3,500 tons of steel necessary for their use becomes most questionable.

In the above, no consideration has been given to the fact that the expenditure of perhaps four cents for the placing of an anti-checking iron in each end of a tie may save the investment of some \$2 in the tie. As remarked by C. E. Smith, vice-president of the New York, New Haven & Hartford, in the *Railway Age* of August 7, page 212, "What a small investment to insure the full life of the tie." Viewed either as a war measure, or as a matter of practical operating economy (a consideration that can not be entirely ignored, even now) this order appears penny-wise and most ill-advised.

L. c. l. Car Economy

The railroads are accomplishing great economy of freight cars in their heavier loading of l. c. l. cars. Since this heavier loading occurred in response to a mandatory order from the Office of Defense Transportation, the ODT, understandably, is claiming a large share of the credit for this improved performance. However, the statistics the ODT has been issuing of freight cars "saved" in consequence of heavier loading of l. c. l. can scarcely be considered, in their entirety, as a *net* addition to the total car supply.

For example, if a car is home-routed empty because the routing line has 4 tons to put in it but not 8 or 10 tons (as required by the ODT), the empty mileage that car runs up is a partial offset to the saving attributed to heavier loading. That is to say, two cars formerly went home—each with 4 tons in it. Now, one of the cars goes home empty and the second with 8 tons in it. A "saving" of one car appears in the statistics, but how much actual economy has there been? Heavier loading of l. c. l. has economized cars, but it is just as well not to exaggerate the extent of the savings. Let it not be overlooked that the ratio of loaded to total car-miles has been shrinking steadily since January—from 65 per cent in that month to 61.2 in May.



This Mediterranean-Type Station at Pomona, Cal., Fits Into Both the Historical and Climatic Setting of the Locality

S. P. Replaces Obsolete Stations, Improves Operation

Modernizes passenger and freight facilities at Alhambra, and Pomona to speed traffic, and revises layout at Palo Alto in connection with a grade crossing separation

TO assure efficiency in its operations in two important cities in Southern California, where the station facilities had not only been outgrown but had also become obsolete by modern standards, so that they were no longer able to provide effective service, the Southern Pacific has completed combination passenger and freight stations of interesting design and modern appointments at Alhambra, Cal., and Pomona. A new station of equally interesting design has also been constructed at Palo Alto, Cal. Although the old station at the latter point was not modern, the primary purpose of this replacement was to permit the elimination of a busy street crossing at grade. Advantage was taken of the opportunity thus afforded, however, to provide facilities that are completely up-to-date.

Although the appointments in all three of the new stations are similar in many respects, and while the basic features of the designs are similar in their conception, in that they conform to the same historical traditions and climatic characteristics of the state in which they are located, in each instance the design was developed to meet specific needs, so that the stations themselves are entirely individual with respect to both appearance and facilities. Throughout the interior of each of these stations the streamlining motif is discernible, although in those at Alhambra and Pomona it is not stressed for reasons that will be explained. It is featured particularly in the design of the exterior of the station at Palo Alto. In the former stations, also, the composition has been integrated skilfully in such a way as to avoid conscious differentiation between the passenger and freight facilities. In other words, each building, taken as a whole,

presents a pleasing appearance, with no suggestion of incongruity with respect to the uses for which the several parts of the building were designed.

Although but a short distance from Los Angeles, being only about six miles from the Union station, Alhambra is a large and independent community and an important point on the Southern Pacific, for the facilities at this station also serve Pasadena, which lies immediately to the north. For this reason, the passenger facilities are commodious, being designed to handle a large number of passengers in a relatively short time, although ample accommodations have also been provided for those whose schedules require some waiting time. Because the station at Pomona serves only its own community, the passenger facilities are somewhat less extensive. On the other hand, the freight requirements are substantially the same at the two stations, and the facilities for handling freight are almost identical.

At Alhambra the building is of wood-frame construction on a concrete foundation, except the walls of the elevated platform of the freight room, which are of concrete with a solid fill supporting the floor. The design conforms to the Mediterranean style, the exterior walls being of textured stucco, with the roof of terra cotta tile in varying shades of color. The structure has overall dimensions of 42 ft. 6 in. by 237 ft. 6 in.

The waiting room and ticket office are treated as one room, the only separation between the two being provided by the open ticket counter which extends the full width of the room. The space for passengers is 27 ft. 3 in. by 40 ft., while the ticket office occupies an area of 27 ft. 3 in. by 30 ft. The room, which is open to the

roof, is 20 ft. high at its lowest point and is spanned by decorative trusses. The walls are of textured stucco, with a dado of darker shade extending to the height of the underside of the windows, and to the top of the ticket counter. This belt is separated from the remainder of the wall area by a darker stripe about 2 in. wide. Otherwise, the walls are without decoration, except for a mural at the west end depicting a typical early California scene, with the San Gabriel mission in the background. The floor of the passenger space is laid with red cement quarry tile, while the floor of the ticket office is covered with linoleum.

Includes an Open-Air Waiting Room

In keeping with the widely-advertised climatic advantages of this section of the country, in addition to the enclosed passenger space, there is also an open-air waiting room at the east end of the station, 22 ft. by 30 ft. in area. These two waiting rooms are connected by a corridor 7 ft. wide and 16 ft. long, on either side of which are the toilet facilities for men and women. On the men's side there are also parcel checking facilities. Corresponding with the remainder of the public facilities, the walls of the open-air waiting room and of the corridor are of textured stucco, and the floors are finished with red cement.

A prominent feature of the design, in keeping with the type of architecture, includes three large arched windows, all with steel sash, on the track side of the main section of the building, and three corresponding windows in the north or rear wall, the middle opening in each case containing the doors that lead into and out of the station. These openings have been used effectively to break up the monotony of the high interior walls, while venetian blinds have been provided to reduce the intensity of the lighting through the large glass area.

While, in general, the interior of the waiting room conforms to the basic features of this type of design, it has necessarily been modified somewhat to meet the demands of utility. Partly through the judicious use of horizontal lines and partly through restraint in the use of decorations, a pleasing effect of streamlining that is nowhere obvious, has been achieved without arousing any sense of incongruity. Furthermore, by lowering the emphasis on incidental facilities and concentrating it on the main purpose for which the waiting room is intended, an air of quiet but cheerful simplicity has been obtained without detracting from the utility of the station.

Keeping Incidental Facilities in Background

Occupying the central and widest section of the station, the baggage room is located to the west or back of the ticket office. It is separated from this office, however, by a series of three rooms, each 8 ft. wide, which extend from south to north across this section of the building. The first room, nearest the tracks, is a lobby for the use of trainmen when receiving train orders or communicating with the agent or his force; the second or middle room, which communicates through a wide open arch with the ticket office, contains the telegraph cabinet and electric switchboard; while the most northerly room is a vestibule opening to the rear of the building, through which both the ticket office and the baggage room can be reached.

The baggage room, 20 ft. 6 in. by 40 ft. 6 in., has two floor levels, the higher one being at the same elevation as the floor of the freight house, and thus at tail-board level, for the receipt and delivery of baggage. The lower floor is at the same elevation as the station plat-

form, so that baggage can be transferred to and from station trucks and the high-level floor without being lifted. There is also a mezzanine floor over the baggage room, containing storage space for station records, and a room for the station heating equipment. The building is heated by the indirect system, consisting of a gas-burning, blower-type heater, with ducts and outlets arranged for equable distribution of the heat. During hot weather, the air is cooled by an evaporative blower-type air cooler. All air is filtered before it is admitted to either the heating or the cooling system.

The freighthouse section is at the west end of the building. This facility consists of a freight room 25 ft. by 64 ft., an uncovered concrete platform, 34 ft. by 36 ft., and an 8-ft. concrete trucking platform between the freight room and the house track. A paved driveway extends the full length of the building, and a 16-ft. ramp at the extreme west end of the open platform, which is at car-floor level, leads down to the driveway.

While the construction of the station at Pomona is the same as that at Alhambra, in that the building has a wood frame with textured stucco walls for both the interior and exterior and terra cotta roof tile of varying shades of color to give a variegated appearance, and while the basic designs are similar in conception both architecturally and in plan, the resemblance between the two stations extends no further. In design, the station at Pomona is of simplified Mediterranean type, with a low tower as the center of interest. The building, which is somewhat irregular in shape and has six roof levels, is 234 ft. by 33 ft. in area.

West Wall Contains Mural

As at Alhambra, the ticket office and waiting room are treated as a unit, with the open counter the only barrier between them. This main room is 32 ft. by 55 ft., with 38 ft. assigned to the passenger or waiting space and 17 ft. to the ticket office and counter. The flat ceiling, 17 ft. high, is beamed and paneled, with decorative corbels at the truss points. The rectangular window openings are fitted with venetian blinds to temper the intensity of the natural lighting. The wall surfaces are the natural light gray of the stucco, with a darker dado to the underside of the windows, and slightly above the counter, bordered by a dark belt about two inches wide. The same subdued streamlining is in evidence as at Alhambra.

The walls are without decorations, except for a mural at the west end of the room. In keeping with the general atmosphere of the design and adding warmth to the simple color scheme, the floor of the waiting room is laid with red clay tile in 2-ft. squares, and this is extended as a red cement floor surface through the open arcade which features the east end of the station and masks the toilet facilities, which are also in the low section of the building just east of the waiting room. The floor of the women's room is laid with asphalt tile and both the men's and women's toilets have tile floors and tile wainscot.

Back of the ticket office is a trainmen's lobby, a large work room and a private office for the agent, which separate the baggage room from the public space. Except for dimensions, 22 ft. 6 in. by 25 ft., the baggage room duplicates that at Alhambra. The freighthouse is also the same, 64 ft. by 25 ft., and the open and trucking platforms and ramp differ only slightly in dimensions. The same type of heating and cooling equipment is used in both buildings.

Surrounding the exterior of each of these buildings, and following a somewhat similar arrangement, planting spaces have been provided for decorative shrubs. At

Alhambra, by reason of marginal streets both north and south of the railway, it was necessary to confine this decorative treatment to the restricted areas between the platforms and the building. At Pomona, considerable additional space was available at the east end of the station, creating an opportunity, of which advantage has been taken, for more extensive treatment, thus adding to the attractiveness of the surroundings. In addition, two relatively large areas south of the tracks were already laid out as parks and these have been retained.

Situation at Palo Alto Differs

At Palo Alto, University avenue, always an important and busy thoroughfare, crossed the tracks of the Southern Pacific at grade, in close proximity to the old passenger station; so close, in fact, that passenger trains blocked the street while making the station stop. In recent years there has been a continued increase in both vehicular and pedestrian traffic, until the situation became sufficiently acute to demand a separation of the grades between the street and the railway, not only to relieve the congestion thus created, but also as a safety measure.

Complications arose, however, by reason of the presence of Alma street, parallel with and immediately adjacent to the right of way on the east, which crosses University avenue at right angles. It was considered undesirable to depress Alma street in order that it might remain at grade with University avenue if that avenue were depressed, not only from the traffic and safety standpoints, but also because this would create a serious adverse effect on adjacent property values. For the same reason, the approach grade on University avenue could not be lengthened enough to permit a separation of the street grades, although such separation was highly desirable.

A further complication was the presence of another important thorough highway route, El Camino Real, substantially parallel to the railway and a short distance west of it, which crosses University avenue nearly at right angles. While not a project involving the railway grade separation, except so far as it affected the plans for that work, the state highway department has in view the eventual separation of the grades between University avenue and El Camino Real, and it became necessary to co-ordinate the two schemes.

Tracks Shifted 80 Ft.

As a solution, the railway shifted its tracks 80 ft. to the west and raised them 5 ft. to allow University avenue to pass underneath. A short section of Alma street was then diverted to the west by a series of graceful curves, bringing it immediately adjacent to the tracks where it was carried over University avenue. The design of the highway grade separation as a whole is in the form of a modified four-leaf clover, with a new overhead driveway west of and adjacent to the tracks, to give access to the new station building and to the spacious parking areas that have been provided.

That portion of the grade separation structure which carries the tracks is of reinforced concrete and steel-beam construction, while reinforced concrete slabs carry the two roadways over University avenue, which is a four-lane divided highway, with sidewalks on each side. Ramps with easy gradients lead from the sidewalks through the grade separation structure to passenger platforms between the tracks and also to the station building. North of University avenue, a large parking space has been laid out between Alma street and the relocated tracks, and a pedestrian subway, with a ramp to the

building, has been constructed to give ready access to this area.

Shifting the track the 80 ft. which was necessary to make it practicable to carry out the grade separation made the existing station useless and this necessitated the construction of complete new station facilities. The new station is modern in design, with the minimum of ornamental details, depending in large part on the use of colored wall surfaces and of interesting materials to produce a lively and at the same time a pleasing composition. Throughout the design, particularly with respect to the exterior, emphasis has been placed on horizontal lines to carry out the modern idea of streamlining and to accent the long low character of the building.

The station, which is 216 ft. by 31 ft. in plan, is of reinforced concrete. The forms for the exterior walls were lined with fibre boards that were selected especially for texture. After the concrete had dried thoroughly, it was finished with a special white paint that did not conceal the texture of the surface which had been transferred from the form lining, but dried with a dull surface that presents an excellent resemblance to stone. A base of brick veneer was employed as a trim for the exterior surface.

Long, Wide Marquise a Feature

A marquise 12 ft. wide extends along the front of the building. The frame is of steel, the soffit being of interlocking steel pans. Steel sash were used throughout. However, effective use has also been made of glass building blocks, which have been applied on either side of the entrances, at the corners at the east end of the waiting room, and in the canopies over the ramps. The interior framing and the roof structure are a combination of steel studs and joists.

Essentially, the station consists of two buildings, the station proper and the baggage room at the west end, separated by an open arcade 22 ft. wide, the roof being continuous from baggage room to station to give the impression of a single structure. The baggage room is 24 ft. by 60 ft., with the two-level floor arrangement. The platform has a cedar deck; the floor is of gray cement. The waiting room is 28 ft. by 59 ft. The walls are finished in stucco and the ceiling is covered with acoustical materials. The floor is of hydraulic cement tile in a pattern of several colors. The floors of the smoking room and the women's rest room are laid with asphalt tile while the floor and wainscot of the toilets are of ceramic tile. The floor of the ticket office and of the offices of the agent and the district passenger agent are covered with linoleum.

In keeping with the exterior, the walls are plain, except for a mural at the east end of the waiting room depicting a historical pageant of the locality. The open ticket counter, the trim and the seating equipment are all of plain oak, which harmonizes well with the atmosphere of simplicity and solidity created by the design. Large window surfaces admit an abundance of daylight, and night lighting is provided by specially designed fixtures. An automatic, thermostatically-controlled, gas-burning heating plant, similar to those at Alhambra and Pomona, with arrangements for recirculating a part of the warm air, has been installed on a mezzanine floor above the toilets. A blower distributes the air through ducts to the various sections of the public spaces and to the private rooms.

These three stations were constructed under the general direction of W. H. Kirkbride, chief engineer. The plans were prepared by J. H. Christie, architect, who also supervised the construction.

Outlook for Steam Motive Power*

Departure from the conventional in an easily-standardized high-pressure condensing locomotive promises to give steam power a new lease on life

By R. M. Ostermann

Vice-President, The Superheater Company

WHAT the relative importance of steam and Diesel motive power is actually going to be in the future of American railroads, will be largely determined by two influences, namely, the trend in the price of oil products, and the future trend in steam locomotive engineering.

As regards fuel, one should remember that the operation of high-speed Diesel engines for locomotives will always necessitate the use of a carefully and consistently-processed fuel. While it seems impossible to predict exactly the extent of oil resources in this country, they were being exploited at a rapidly increasing rate under peace conditions. A long war, with greatly increased demand from the navy, air force and army, added to substantially larger transportation requirements, may well cause the price of Diesel oil and other oil refinery products to rise much faster than that of coal. In this connection, a fairly recent Industrial Bulletin of Arthur D. Little, Inc., states: "The depletion figures for the past five years, when compared with additions to proven reserves, show that there is cause for concern. During this period we have not been running quite fast enough to keep in the same place. Though we still have 20.3 billion known recoverable barrels of oil in the ground, we are using this up at the rate of almost 1.5 billion barrels a year. With consumption at its current rate, our visible reserves have shrunk to 14.6 years. During the last five years not only has consumption been increasing, but apart from a slight increase last year over 1940, new reserve additions have been decreasing."

Future Trends of Steam Locomotive Design

The evolution of the "iron horse" of Stephenson's day into the modern locomotive is a record of remarkable achievement on the part of generations of steam locomotive builders, engineers and inventors. Comparatively recent years have witnessed the improvements brought about by increased steam pressures, higher superheat, preheating the feedwater with exhaust steam, larger fireboxes, improved grates, more efficient combustion conditions and draft-making apparatus, together with a good many purely mechanical improvements, such as roller bearings, and lighter reciprocating parts for better counter-balancing and running conditions. More recently, also, a promising poppet valve gear has been developed, which is going to be helpful in getting the steam in and out of the cylinders at abnormally high piston speeds without exorbitant pressure loss, thereby adding to the power of the locomotive at such high piston speeds.

While the improvements mentioned have enabled steam locomotives to keep pace with ever-growing de-

mands for more speed and power, all of the power increase has not been accompanied by a corresponding decrease in fuel and water consumption per drawbar-horsepower-hour, but has been brought about chiefly by burning more fuel and getting more steam to the cylinders. This has necessitated larger and heavier locomotive tenders.

In general, the fact should be kept in mind that after steam temperatures have been increased to the maximum permissible for satisfactory lubrication of engine valves and cylinders, and after advantage is taken of all now-recognized and practiced possibilities of refining the design of valves, cylinders, steam passages and draft-making appliances, a further saving of steam per indicated-horsepower hour would be physically possible only by expanding the steam through a larger pressure range, i. e., by allowing each pound of steam to suffer a larger heat drop than it experiences in the present type of steam locomotive.

Also, one important limitation of the present type of steam locomotive should be clearly recognized, namely, that its lowest steam rate per horsepower-hour is not obtained at the point of highest operating speed, and consequently largest horsepower requirement where high efficiency would be most useful, but generally at lower piston speeds. This is so because we provide the means for forcing the steam generation and utilize the increased amount of steam thus made available with cutoffs which restrict unduly the expansion range. It is not at all unusual to see a modern boiler with a large firebox and a good front-end steam satisfactory with a cut-off of 50 per cent. When such a locomotive carries a boiler pressure of 300 lb., the steam will have expanded to only about 150 lb. when pre-exhaust takes place, and the work which the steam could have done if it had been allowed to expand from 150 lb. to the prevailing exhaust pressure in the cylinder, is lost through the stack. That is the principal reason why the efficiency of two-cylinder reciprocating locomotives is bound to remain low, though we build greater and greater power into them.

"Preoccupation with Reliability" Blocks Progress

Many engineers, of course, clearly recognize the thermal limitations of the conventional steam locomotive, and several European designers have tried to create radically new types. Some did not succeed commercially because the engineering conceptions were not practical enough at the start. Others failed because of lack of encouragement from experienced railroaders. W. A. Stanier, Chief Mechanical Engineer, London, Midland & Scottish, once explained the lack of initiative on the part of English railroads in taking advantage of greater thermal possibilities, as follows: "The preoccupation with reliability has tended to provide arguments against

* Excerpts from an address before the Pacific Railway Club.

breaking away from practice which has been well tried in the past." The protagonists of Diesel power in railroading, having successfully overcome many railroad men's distrust of a radically new and untried form of locomotive, have therewith made themselves deserving of special credit. It may well be that, from their success, the still steam-minded locomotive designers will derive the courage to venture, themselves, into more radical design innovations in the application of steam to locomotive propulsion than they have been willing to sponsor heretofore.

Among the important operating advantages of Diesel locomotives, recognized by all unbiased observers, are: Low water cost and reduction of train delays by elimination of water stops; low fuel cost; high availability due to reduced terminal delays; and flexible power development, i. e., the ability to utilize the rated maximum power of the Diesel engines throughout a relatively large range of operating speed, thereby making it also possible to increase, without increasing, the tonnage of trains which have to be hauled over grades of varying steepness, as well as to increase average speeds in general, due to relatively quick acceleration of trains from standstill.

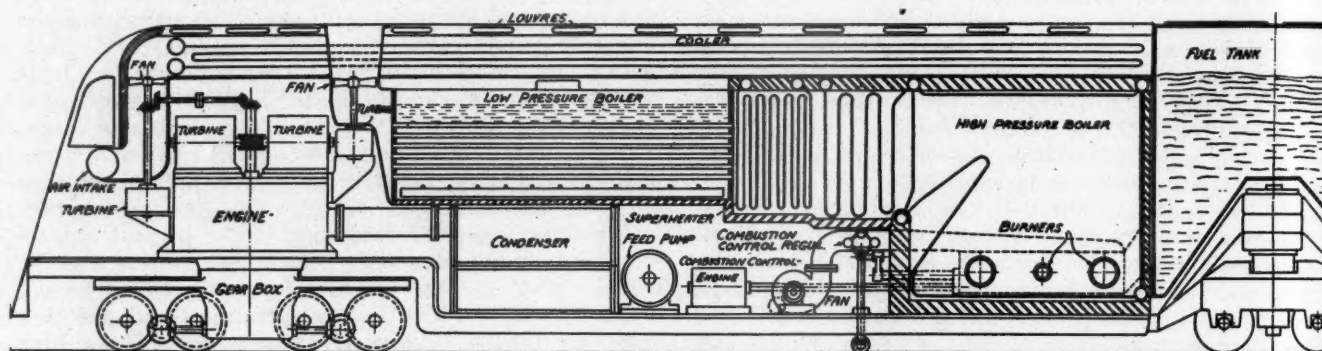
Contrary to popular impression, the advantage of lower fuel cost is, even at present market prices, the

of maintaining substantially higher locomotive steam pressures in watertube boilers which will give satisfactory results only with relatively pure feed water such as is to be found on few railroads in this country.

The Designers' Fundamental Problem

I am of the opinion, therefore, that any attempt to increase the thermal efficiency of American steam locomotives substantially will also necessitate the development of condensers capable of handling the entire exhaust steam of the locomotive, so as to be able to feed only condensate back into the watertube boilers. The steam engineer's final conclusion will undoubtedly be as follows: Minimum fuel cost demands ultra-high boiler pressures and steam temperatures; ultra-high pressures demand watertube boilers for reasons of weight and safety; watertube boilers operated with ultra-high pressures demand pure feedwater; pure feedwater demands condensation on the majority of American railroads and promises to all railroads freedom from frequent water stops, boiler washings and boiler repairs.

If the condenser problem can be solved, and I believe it can—with a greater efficiency of steam expansion—there is a good chance not only of beating the fuel cost record of the Diesel locomotive, but of approaching the



Diagrammatic View of One Unit of a Proposed Duplex High-Pressure Condensing Steam Locomotive

least spectacular. In many localities, today, three times as many heat units can be obtained per dollar spent for adequate locomotive coal, as for the same dollar spent for Diesel oil. Even though Diesel locomotives have approximately four times the thermal efficiency of modern conventional steam locomotives at the drawbar, in the same kind of service, it follows that the fuel cost advantage of the Diesel locomotive could be wiped out by a 33 per cent increase in the Diesel fuel price or by a 33 per cent rise in the thermal efficiency of steam use. I firmly believe that the fuel cost record of the Diesel locomotive can be beaten, decisively and consistently, and that a steam locomotive will be developed eventually which will allow the steam to expand through a much greater pressure range than it is possible to obtain with the present type of steam locomotive.

There seems to be only one practical method for reaching this objective, and that is to generate the steam at a much higher pressure than now common, and to employ prime movers for the propulsion of such a novel steam locomotive which will utilize fully the expansion range between the high generation pressure and a near atmospheric exhaust pressure, particularly at the time of maximum power development. Experience with 300-lb. pressure locomotive-type boilers fully indicates that it would not be practical to employ them with appreciably higher pressures for various technical reasons and for the sake of safety. Apparently the only practical way

water cost of the latter and of eliminating water stops in operation. The use of successful condensing equipment would also increase the availability of the steam locomotive, since boiler washing would be eliminated and boiler repairs would, doubtless, be considerably reduced.

Assuming that it is possible thus to utilize more fully the latent power of steam, the greater flexibility of Diesel locomotives cannot be duplicated with steam without some drastic departure from the general mechanical arrangement of present two-cylinder steam locomotives. The latter are not only relatively deficient in adhesion and maximum drawbar pull, but, due to their method of drafting, their sustainable power rises gradually with their advancing speed to the maximum. On the other hand, it is possible to provide very large starting drawbar pulls with Diesel locomotives, due to carrying a large percentage of their weight on driving axles, due to the uniform torque of their electric motors and due to the elimination of the tender.

The primary objective in a radically new steam locomotive design is a frame, truck and wheel arrangement by means of which as large a percentage of the locomotive weight as possible can be carried on driven axles, therewith increasing the maximum tractive force as much as possible. The drawing shows one unit of a proposed duplex condensing high-pressure steam locomotive without electric drive. In this design, power is furnished by a steam turbine compounded with a rotary

non-lubricated displacement engine of fairly high speed, both of which drive the axles of a four-axle truck through gearing, quills and a vertical drive shaft concentric with the truck center pin. The steam, generated in high and low-pressure boilers, passes through the prime-movers and then is entirely condensed in air-cooled condensers located in the locomotive roof, as shown. The firing of either coal or oil (the former probably in powdered form) is automatically adjusted to the prevailing load. The low-pressure boiler has sufficient water storage capacity for a water reserve useable in case of accidental steam or water leakage. The fuel supply is carried in a hopper adjacent to the firing end of both power plants.

Total Locomotive Weight Important Factor

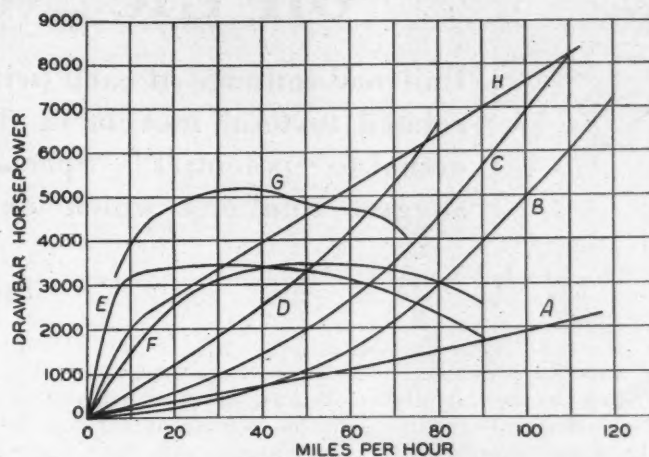
In developing this design, an effort should be made to reduce the total locomotive weight to such a point that it can be carried on two swivel trucks, using the middle truck only as a guide truck in curving and for supporting the variable fuel load. It would be quite practical to carry 400,000 lb. on the eight driving axles of such an articulated duplex locomotive, assuming wheels of about 45 in. to 48 in. in diameter, and to drive with sufficient torque uniformity in starting, so that the wheels will not slip with a drawbar pull of 115,000 lb.

Assuming such a locomotive equipped with variable-pressure steam turbines operating at maximum load with pressures up to 2,000 lb. and 850 deg. F., and working in conjunction with rotary uniflow engines in which the steam is expanded from 150 lb. down to 2 lb. pressure above the atmosphere, it is possible to forecast horsepower-speed characteristics which are in some respects more favorable than those of a Diesel locomotive, as shown in the chart. Referring to this chart, Curve B represents the calculated drawbar horsepower required for overcoming the train and locomotive resistance (air resistance excluded) of a 1,000-ton train at the various operating speeds (on straight level track). Curve C represents the same requirements, but includes sufficient power to accelerate the train at a rate of 10 miles per hour per minute. Curve D is the corresponding total power requirement on a $\frac{1}{2}$ per cent grade. Curve F represents the drawbar horsepower established in the test of a 5,400 hp. 4-6-4 steam locomotive; Curve E, the drawbar horsepower of a formerly-built 5,400 hp. Diesel passenger locomotive; Curve G, the horsepower-speed characteristic of a 5,400-hp. Diesel freight locomotive; and Curve H, what the proposed duplex high-pressure steam locomotive may be expected to accomplish.

Excess Power Required for Acceleration

It is somewhat doubtful whether it will be possible to obtain, with a steam locomotive without electric drive, a horsepower-speed curve which rises quite as rapidly as that of a Diesel electric locomotive. A very rapid rise of this curve is produced by the unusually large starting tractive force which Diesel locomotives possess but which can be obtained only at the expense of providing an unusual number of driving axles and allowing an excessive locomotive length, both characteristic of an electric multiple unit system. In the operation of the majority of trains in through-freight and passenger service, a quick acceleration from standstill is relatively not as important as the ability to accelerate a train from a relatively high speed to a still higher speed within a reasonable distance. Curve A, being the power required only for acceleration, shows clearly that it is excess power for acceleration at higher speeds which adds chiefly to a locomotive's operating value. I fully believe

that whenever the steam locomotive designer proves that he can build steam plants of small enough weight, able to provide the necessary large excess of power required for acceleration at high speed, he can afford to dispense with excessively large starting efforts, with excessive locomotive length, with the expensive electric drive and



Horsepower-Speed Characteristics for High-Pressure Condensing Steam Locomotive Compared with Those of a Diesel-Electric

with the multiple-unit system. Curve H on the chart can, however, be realized only with a combination of steam-generating and steam-consuming apparatus with which the steam consumption per horsepower decreases steadily up to the limits of the boiler capacity, and as the power requirement increases.

As far as the field of switching operations is concerned, the reasons for operating success of Diesel locomotives are far more obvious than in through-freight and passenger service, because, in switching service, sufficient power for quick acceleration from standstill is chiefly required, more than sustained power at speed. However, a steam locomotive developed along the lines briefly described would apparently be a formidable competitor for the Diesel locomotive in through-passenger and freight service.

Such an improved steam locomotive would, I believe, not weigh more than about 100 lb. per drawbar horsepower, including an adequate water reserve, and one general design should serve for all sizes up to about 6,000 hp. By reason of the suggested drive, which involves a geared transmission, it would be entirely possible to obtain a much more far-reaching standardization than is possible with present steam locomotives. By altering the gear ratio between the drive shaft and the driven axles, together with the engine proportions, it would be possible to utilize the maximum boiler capacity of the locomotive at varying maximum speeds, without materially altering the structure of the locomotive.

HEALTH FILMS PREPARED—A series of non-advertising sound slide films dealing with health protection, prepared under the direction of C. O. Sappington, editor of "Industrial Medicine," is now available on a commercial basis through Commercial Films, Inc., Cleveland, Ohio, distributors of the National Safety Council films on industrial safety. The health series, beginning with a production called "Take Care of Yourself," is designed to fit into a program of industrial health work that will, it is hoped, reduce time lost due to illness during the present emergency. Other titles include "The Cold Bug," and "Food Keeps You Fit." Each film includes 80 to 100 scenes, and projection requires some 15 or 20 minutes.

Traffic Trends Get Close Study on the New Haven

Railroad tonnage of each principal commodity is currently related to total movement thereof, to determine ratio of actual to "potential"—Special studies of specific problems suggest solutions which derive from quantitative facts

Part I

SINCE 1936 the New Haven has, with constantly widening comprehensiveness, been subjecting to statistical scrutiny its traffic position in relation to the traffic potentiality of its territory; with more intensive examination of particular situations where the need or opportunity for improvement is revealed. This program has already enabled the road to take profitable corrective action in a number of situations which were disclosed as likely subjects for improvement. More than that, however, is the fact that systematic analysis of such data—keeping it constantly up-to-date in "boiled down" summary form for the information of traffic and other executives—has brought about the novel and favorable situation that *virtually every policy decision on traffic questions is now a matter of dealing with known quantities*. There is no longer much of an element of uncertainty involved in passing judgment on proposed rate or service changes, since quantitative facts are at hand to lend precision to such day-to-day decisions.

This continuous study is not a matter of broad generalizations. It begins (in freight traffic) with current figures on the available volume of each of the 28 major commodity groups the road handles—together with the percentage of the available volume actually secured for rail movement. The road thus knows, practically from day to day, what is happening to each important item of traffic, in its region, and what share of this total it is securing. No disturbing situation can develop very far without being detected—and such conditions, when they arise, are the immediate occasion of exhaustive study to ascertain the steps which need to be taken to reverse an unfavorable trend or fortify a favorable one.

Outgrowth of Reorganization Studies

The intensive study of traffic trends had its inception in statistical work undertaken in connection with the road's reorganization. For this purpose the traffic department during 1936 and 1937 made a comprehensive study of business and transportation conditions in New England and United States, as a basis for forecasting the railroad's prospective revenues during the ensuing five years. Study was made of New England business and traffic conditions, covering subjects such as the trend and status of New England business, its importance relative to the rest of the country, factors in its growth, and traffic problems created by highway, water, pipeline and airway competition. Working from this base, forecast was made of general business activity and probable traffic of the railroad and (where the information was required) of segments thereof. How accurate this forecasting was is disclosed by the fact that, for the five

years ended 1941, the New Haven's total operating revenues averaged 1.5 per cent less than the forecast made five years before.

Passenger Traffic Also Analyzed

Somewhat similar study was made of the passenger situation, showing the effect of changes in fares, and improvements in service. Then special economic studies were made for each of the 28 major commodity groups handled by the railroad, as stated heretofore. Analysis was made of the trend in consumption or production of each commodity in the railroad's territory and the underlying factors affecting it; and of changes in methods of distribution and the reasons therefor, particularly the growth of competition from trucks and boats.

Based on this economic study of the individual commodities and the forecast of the general level of business, forecasts were made for each of the commodities. In these studies, considerable weight was given to the extent of diversion of traffic, separately for each commodity, by comparing the railroad's traffic with that available for transportation as indicated by consumption, production, distribution, etc., in the territory.

The initial study was started in the spring of 1936 and the final report was made public in May, 1937, in connection with hearings on the financial reorganization of the company before the I. C. C. in Washington. It is believed that this was the first comprehensive study by a railroad of long-term economic conditions both for business as a whole and the major types of industry in its territory; also of the trends of all major types of traffic handled by the railroad as compared with the trend of total traffic shipped by the industries served.

The New Haven's studies in traffic "diversion" appear to have been the pioneer effort in this field. At any rate they preceded by a year such publication by the Bureau of Statistics, I. C. C., for the railroads as a whole, and by an even longer period the first issue by the A. A. R. of its report entitled "Railway Freight Traffic Trends (Potential and Actual)."

After the New Haven's completion of its original economic and traffic studies, separate freight and passenger traffic statistical departments were organized, with each reporting directly to F. J. Wall, vice-president in charge of traffic. The work is under the general supervision of A. A. Drummond, assistant general traffic manager—the freight traffic study being directed by E. C. Nickerson, assistant manager, sales and service, and that of passenger traffic by R. H. Forsythe, statistical assistant.

The freight traffic statistical research department has

a staff of four men and one stenographer-comptometer operator. All the men have had previous experience, both with the railroad as well as other businesses, and all are college graduates with training in statistics and economics. As special work requires, temporary workers are added.

The department's original general purpose was to study long range aspects of business and the freight traffic to determine how net revenues might be increased; to report on developments in transportation and industry affecting the railroad; and to handle assigned special jobs outside the normal functions of other parts of the traffic department. Since the department was breaking ground in the almost wholly new field of freight traffic research, the exact purpose at the outset was loosely stated to give freedom to develop as might appear best as experience in this new field became wider.

Types of Analysis

This department's work falls into the following general classifications:

1. Maintaining regular records, which extend back for many years, of the trends of traffic available for transportation in the railroad's territory, compared with the New Haven's tonnage, for each major commodity.
2. Assembling and keeping up-to-date extensive files on practically all available economic data pertaining to the railroad's territory by industries, cities, etc.
3. Conducting special studies of various types of traffic, which include analyses of trends in the industries served and reasons therefor, trends of traffic moving by rail as well as by competition, determining through field surveys and other sources the amount of traffic moving by various agencies and ways and means of increasing the railroad's net earnings, and then analyzing the effect of any proposed changes on present revenues and expenses; also making special studies of various trans-

Similar Comparisons of Actual and "Potential" Are Maintained Currently for All Principal Commodities

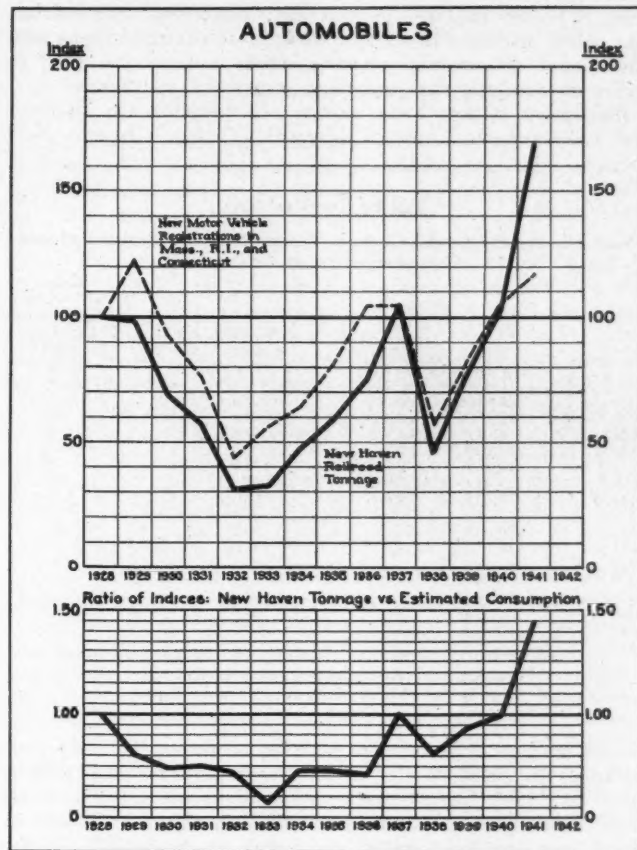


Chart I

Table 1—Automobiles

New Haven Railroad Automobile Tonnage* and New Motor Vehicle Registrations in Massachusetts, Rhode Island and Connecticut

Year	New Haven Railroad		New Motor Vehicle Registrations in Mass., R. I., and Connecticut†		Ratio of Indices New Haven Railroad Tonnage to New Motor Vehicle Registrations
	Tonnage	Index	Number	Index	
1928	154,707	100	203,500	100	1.00
1929	152,260	98	250,300	123	.80
1930	106,683	69	188,900	93	.74
1931	87,639	57	153,960	76	.75
1932	47,952	31	87,500†	43†	.72†
1933	49,104	32	113,565	56	.57
1934	72,193	47	130,764	64	.73
1935	91,486	59	164,308	81	.73
1936	116,051	75	214,096	105	.71
1937	162,178	105	214,122	105	1.00
1938	71,867	46	115,860	57	.81
1939	119,375	77	168,325	83	.93
1940	158,897	103	210,873	104	.99
1941	261,044	169	238,531	117	1.44
1942					
1943					
1944					
1945					

* I. C. C. Commodity Classifications—590 Automobiles, passenger; 591 Autotrucks; 592 Automobiles and autotrucks, K. D., and parts, N. O. S.

† Source: "Automotive Industry"—Statistical Number.

‡ Estimated.

portation and business developments to determine their possible future effect on the railroad and how the company's net earnings can be best increased or preserved. In some instances, this work has required cooperative study with operating and other departments.

4. Making special studies of economic and traffic trends and conditions in particular parts or cities in the railroad's territory.

5. Analyzing changes in rates and service which have already

been made, as well as new proposals, to determine their profitability to the company.

6. Furnishing of regular reports to management and employees of business conditions in the railroad's territory.

7. Forecasting periodically business and traffic conditions, from a month to a year and more in advance.

8. Carrying on miscellaneous studies or work such as special comparisons of the railroad's traffic with that of other roads, special checks on traffic or service, and other items.

The better to illustrate the nature of the work, there now follows more detailed description of each of the general types of investigation, as outlined in the foregoing (bearing, for reference, the same numerical readings) with specific references to some of the studies completed or in process.

How "Potential" is Determined

1. *Commodity Studies.*—For each commodity important to the railroad, records are maintained of the total traffic available for transportation in the railroad's territory for comparison with the railroad's tonnage. For example, regular records are kept of the consumption of cotton in the territory for comparison with the road's cotton traffic. For some commodities it has been necessary to compile "synthetic" figures to determine traffic available (as with iron and steel, where the aggregate "potential" is reached by taking the sum of the iron and steel produced in New England, plus tidewater receipts, plus all rail receipts). From this record is computed for each major commodity and for the railroad's freight traffic as a whole a ratio of traffic handled to that available.

This gives a running record on actual performance compared with "potential"; serves to point out specific weaknesses; and to indicate the commodities or industries where the greatest

opportunities lie for securing new traffic or recovering lost traffic for the railroad. This running record of the ratio of actual to "potential" serves as a gage of the effectiveness of changes in rates, solicitation, or service, and changes in the trucking or steamship situation, etc. These ratios also indicate where further study is needed and, in a general way, help in rate and solicitation policy making. In all this work, close contact is kept with government information agencies, trade associations, etc., to secure all available data regarding commodity distribution.

Illustrative of how these indexes are compiled are Tables 1 and 2 and Charts I and II herewith. Table 1 records New

the operating department analysis was made as to the profitability of proposed rates. Practically all the changes indicated by the research had been verified and approved when the war broke out. Because of this, these changes are being held in abeyance for the present.

Store-Door Delivery Found Remunerative

(b) *Merchandise Traffic:* After free store-door delivery had been in effect for about a year, comprehensive analysis was made as to whether it had increased the railroad's net revenues. The railroad's l. c. l. traffic before and after store-door delivery was compared with related carload traffic, business activity in Southern New England, and other factors, and principal shippers were interviewed to secure estimates as to amount of traffic secured on account of p. & d. Studies were made as to added costs on account of the service. This investigation revealed that, following the initiation of p. & d. in November, 1936, revenues increased more than the expense of the service. On the basis of this information, the New Haven retained free p. & d. when the other New England lines discontinued such service in 1938. In 1940 the other New England lines restored free p. & d.

Later, following certain preliminary work, a study was made of the possibilities of increasing l. c. l. traffic and net earnings. A committee was formed representing various departments and men were drawn from the several departments for consulting and regular work as needed. Analysis was made by means of a field check with shippers and other sources of the amount of l. c. l. moving by truck and boat and the rates and service provided by the competition as well as that of the railroad. Study was made of the possibilities of the railroad meeting competitors' rates and service and potential revenues, as well as the possible effect on existing rail revenues of meeting competitive rates and the operating expense of providing the service equal to or better than that of the trucks.

Also, investigation was made of the possibilities of increasing the railroad's participation in short-haul l. c. l. traffic moving distances of 100 miles or less. The East End of the New Haven was selected as a trial area, and, in collaboration with

Table 2—Cotton

New Haven Railroad Cotton Tonnage* and New England Consumption of Cotton†

Year	New Haven Railroad		New England Consumption of Cotton		Ratio of Indices New Haven Railroad Tonnage to New England Consumption of Cotton
	Tonnage	Index	1,000 Bales	Index	
1928	195,052	100	1,328	100	1.00
1929	218,919	112	1,416	107	1.05
1930	137,090	70	959	72	.97
1931	98,915	51	921	69	.74
1932	55,498	28	681	51	.55
1933	78,655	40	973	73	.55
1934	77,984	40	909	68	.59
1935	86,861	45	806	61	.74
1936	115,034	59	928	70	.84
1937	105,823	54	975	73	.74
1938	92,147	47	738	56	.84
1939	135,645	70	912	69	1.01
1940	164,374	84	929	70	1.20
1941	316,898	162	1,260	95	1.71
1942					

* I. C. C. Commodity Classification Numbers 90 and 91.

† Compiled from U. S. Bureau of Census monthly figures.

Haven tonnage of automotive vehicles, compared with new registrations of such vehicles in its territory. The year 1928 is taken as "100" for the computation of relatives. The ratios from Table 1 are shown in graph form in Chart I. It will be noted that the relationship of actual to "potential" is also plotted (bottom curve in the chart), thus showing vividly whether the railroad is gaining or losing in its battle with adverse forces.

Similar information for cotton is shown in Table 2 and Chart II. The road, as stated heretofore, keeps current information, analyzed in this manner, on 25 of its most important commodities including l. c. l. freight. The data here shown are presented on an annual basis, but the company also compiles them, wherever practicable, on a monthly basis—so it does not have to wait a year to find out what the trend is.

2. *Records of economic data by industries and cities.*—Records are kept covering pertinent data available from government agencies, trade associations, Chambers of Commerce, etc., as to trends and changes in all important industries and cities served by the railroad. This information is much more detailed than that needed for the commodity studies alone, and is used in special studies, regular reports on business conditions, and for other purposes; also, this results in the department serving as a central agency to which other departments can turn when in need of economic data.

How to Retain Petroleum Traffic

3. *Special studies to increase net earnings on various types of traffic, or determine effects of transportation and business developments, and how best to increase or preserve earnings:*

(a) *Petroleum Traffic Study:* This investigation involved a comprehensive examination of the trends of the railroad's petroleum traffic as compared with petroleum consumption in the railroad's territory; changes that have taken place in methods of distribution and an analysis of present methods; the competitive position of the railroad, based upon interviews with shippers and field men, and a study of truck rates, truck operating costs, boat rates, etc. Then, based on this research, a plan was worked out to improve the railroad's earnings. In co-operation with the rate department a definite proposed rate schedule was prepared, with analysis being made of the effect on existing rail revenues compared with "potential"; and in collaboration with

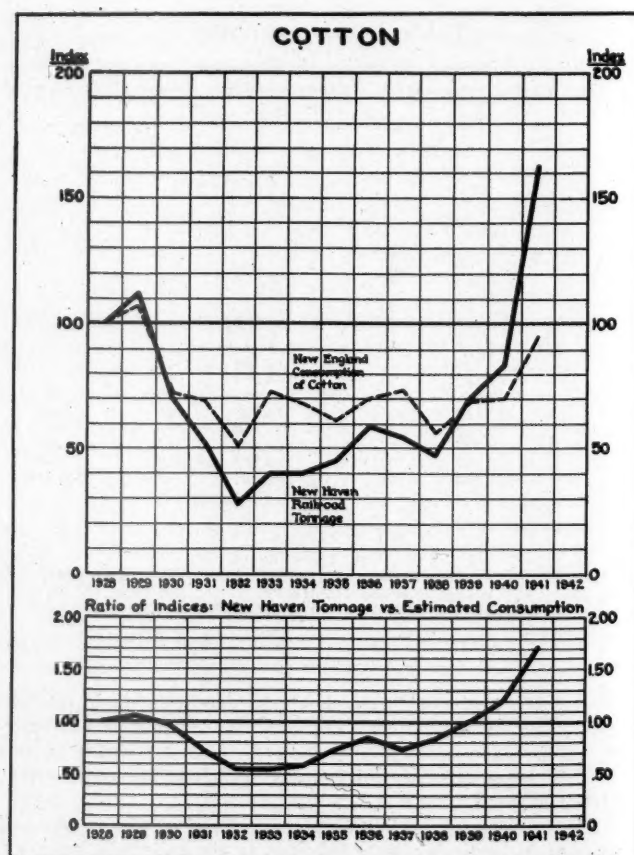


Chart II

the Railway Express Agency, a field survey was made with shippers to determine the amount of truck traffic moving between points in the area and the competitive rates and the service. Analysis was made of the possibility of publishing the same rates as the trucks, including volume-quantity up to 20,000 lb. in Express Agency tariffs, and handling the recovered traffic on passenger trains—and the effect of this on present rail and express revenues, passenger service, and cost of providing the requisite service. The study indicated the desirability of this experiment. It was instituted, and the railroad's net earnings on freight thus recovered in the test area alone are running in excess of \$50,000 annually.

Figures on Results of L. c. I. Policy

It is significant that, although prior to 1935 the railroad's l. c. l. tonnage had been lagging considerably behind New England business activity, since then it has been held up considerably better. Comparing 1939 (last year before defense program) with 1935, New Haven l. c. l. tonnage increased 17 per cent compared with a gain of only 9 per cent for New England business activity, 11 per cent for l. c. l. tonnage in the Eastern district and 6 per cent for all Class I railroads.

(c) *Coal Traffic*: A study is now in process of bituminous coal consumption in Southern New England and the reasons for changes, such as shifts to oil, waterpower, greater fuel efficiency, growth of centralized power plants, etc.; the relation of the trend of railroad's traffic to that of coal used in the area; the shift in use by New England consumers from Northern to Southern coal, the reasons therefor, and its effect on the railroad's traffic; the present position of the railroad in competing for Northern coal and the competitive position of Northern as against Southern coal in New England (which involves the matter of costs of production, handling, transportation, rates, etc.); and an analysis of various possibilities of increasing the railroad's coal traffic. This study has not been completed or final recommendations submitted, because of developments in connection with the war.

Air Freight a Serious Threat?

(d) *Air Freight*: Analysis was made of the growth of air express both in the United States and abroad; present arrangements for handling air express; costs of operating planes hauling exclusively freight, including terminal and pick-up and delivery expenses; estimated air freight costs compared with present air express, rail-express, and railroad l. c. l. rates; air freight service compared with overland; possible effect of air freight on New Haven revenues; and the effect of air-freight on distribution practices.

(e) *Pipe Lines*: Study was made of the growth of pipelines, cost of transportation via pipe line compared with other agencies, and the general economics of pipelines; possibilities of more pipeline construction directly affecting the New Haven which involved analysis of the principal consuming areas in the territory, strategic pipeline routes; the possible cost of constructing pipelines via these routes, and the costs of laying down oil in same markets via other transportation methods; also potential gross and net revenues of pipelines via these routes. Plans to meet the pipeline competitive situation have been made, but are in abeyance because of the war.

(f) *New York Terminal*: A committee representing the various departments was appointed to study New York Terminal traffic and operations. Detailed analysis was made of the revenues and expenses of each type and class of traffic moving to and from and through New York. In all cases where net earnings were weak, further traffic and/or operating studies have been or are being made as to the possibility of improving the situation. Earlier studies had also been made by traffic and operating departments.

Since 1938 the method of handling freight destined to or originating at New York City has been completely changed. Formerly most New Haven freight for New York City moved to railhead in the Bronx where cars were transferred to carfloats and then towed by tugs to the railroad's pier stations in downtown New York; there the freight was unloaded onto the piers and then to trucks for final delivery. Now practically all of the railroad's carload, except lighterage, and a considerable part of its l. c. l. freight for downtown New York City, moves

directly by truck between the railhead in the Bronx and patrons' store-door in New York City. L. c. l. freight moves in railroad contract trucks to store-door or downtown stations; while carload freight, except lighterage, is handled in patrons' trucks. A new freight terminal has been built at the railhead in the Bronx, one downtown pier station discontinued, and another reduced in size, permitting the discontinuance of three downtown piers.

Large Savings at New York

As a result of all these changes, service on both l. c. l. and carload freight has been expedited, handling of freight reduced, and considerable savings made possible. The reduction in rental and maintenance expense of downtown pier stations alone amounts to about \$250,000 annually.

(g) *Post-War Business and Traffic Conditions and What the Railroad Should Do*: This study has been in progress for several months. Part I covers what happened to business and transportation in the United States and New England after other wars and involves a study covering the effect of previous wars on business as to volume, shift as between parts of the country, and foreign trade, with particular reference to the period following the first World War; analysis was made especially of the first World War and the following period and its effect on rail and competitive transportation agencies. Study has been made of the current effect of the present war on industry, particularly in New England, involving analysis of the distribution of defense awards and new plant construction in various parts of the United States; the current competitive status of rail, truck, boat, air and pipelines for moving freight. Based on the foregoing information, conclusions are being drawn as to both the short and long term outlook for business in the railroad's territory, relative shifts in industry as between New England and other parts of the country, and the outlook for competition from truck, boat, air and pipelines.

The second part of the study covers suggested action by the railroad to meet the post-war situation, involving matters such as restricting any tendency of industry to migrate from its territory, and point out fields and types of freight where effort should be concentrated, either because that is where competition is expected to be the greatest or because there are large volumes of potential new or recoverable traffic.

(h) *Proposed General Rate Revisions*: Analysis has been made of proposed general revisions of freight rates.

"Trainload" Rates and "Road-Rail"

(i) *"Trainload Rates"*: Study has been made of the possibility of "trainload rates" in New England, reviewing the experience elsewhere and the potentialities of their application by the New Haven.

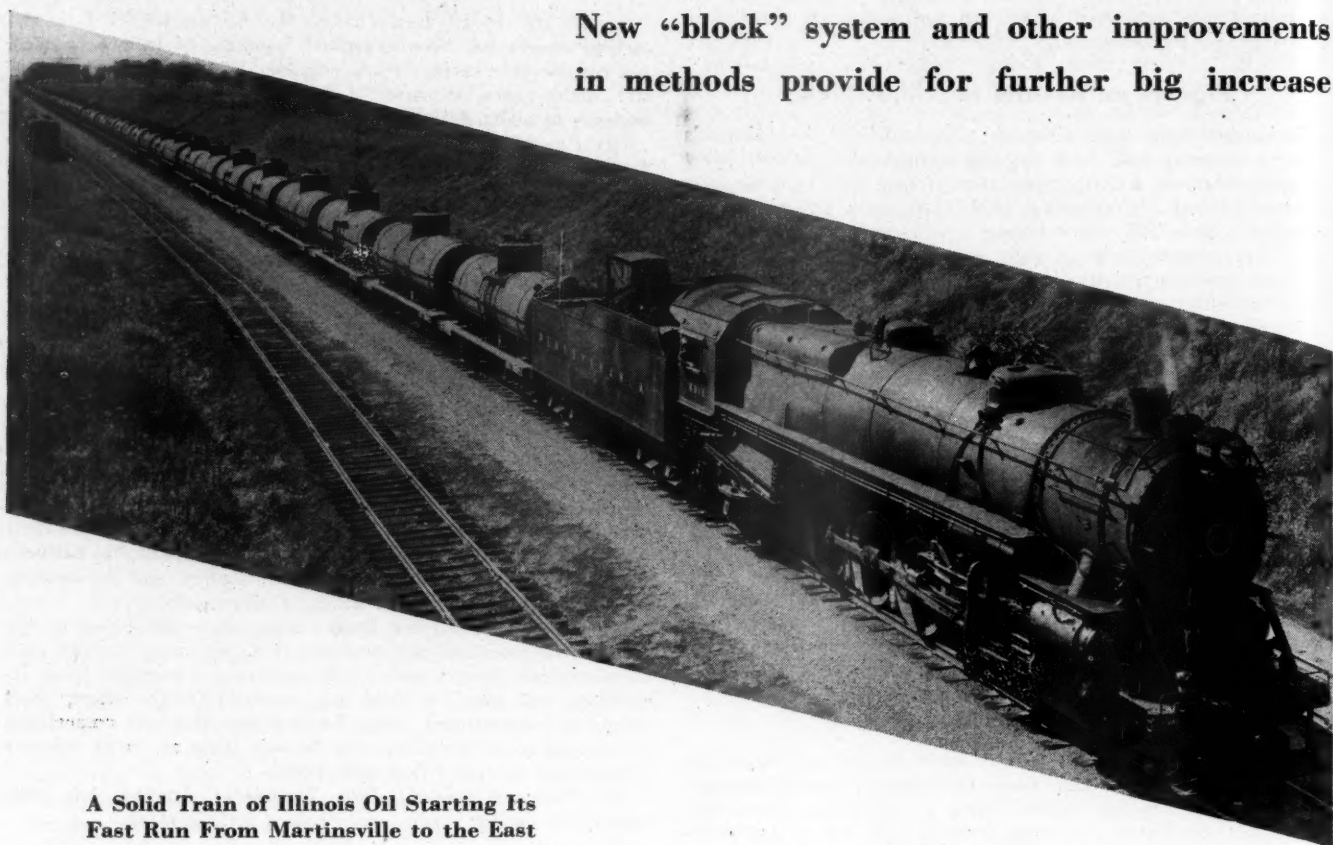
(j) *Special Proposals*: Analysis was made of a proposal for the use of containers by means of which all freight would be transferred from store-door over the road to outlying railroad yards (replacing present cars) and there transferred to pre-assembled trains; also of a proposal that the New Haven use a "road-rail" system where special motive power would haul cars so designed that at terminals they could be pulled off the tracks and hauled over-the-road to consignee's door.

(k) *Steamship and Highway Subsidiaries*: Studies have been made of the traffic and revenue trends of the New England Transportation Company and the New England Steamship Company, the railroad's highway and steamship subsidiaries.

Part II of this article, to be published in an early issue of *Railway Age*, will give details of the New Haven's research into particular problems—such, for instance, as its intensive study of the traffic and revenue outlook of its "East End" lines. Also reviewed will be its investigation of projects such as "trailer-on-flatcar" service, monthly forecast of traffic and revenues—with some observations as to principles which, experience indicates, must be observed if research of this character is to have practical results in improved railroad performance. The next installment will include, in addition, a description of the methods employed by this road to keep informed as to trends in its passenger traffic.

Rails Now Deliver 60 Per Cent of Eastern Oil Demand

New "block" system and other improvements in methods provide for further big increase



A Solid Train of Illinois Oil Starting Its Fast Run From Martinsville to the East

THE remarkable record which the railways are making in the transportation of oil to refineries and points of distribution in eastern seaboard states is another example of the ability of these privately owned railroads of the United States to meet new demands and serve the country in time of war. It is also a testimonial to the ability of the railroads, the petroleum industry and the tank car operating companies to cooperate to accomplish this gigantic undertaking.

The movement of oil in tank cars is not new to the railroads, although in recent years pipelines and tankers owned by petroleum interests have become the prevailing mode of oil transportation. In 1940, when oil consumption was at its peak 1,765,587 carloads of petroleum and its products were originated by the railroads throughout the United States. Yet in 1927, when oil consumption was much less but before tanker and pipe service had been so highly developed, the railroads originated an all-time peak of 1,820,712 carloads.

As a result of the diversion of this traffic to the newer agencies of transportation in recent years, tank car ownership declined to such an extent that when 50 American tankers were transferred to British use in April, 1941, the railroads owned only 9,000 tank cars, the leasing companies and petroleum companies about 125,000, the chemical industry about 12,000 and the molasses, alcohol and vegetable oil industries about 4,000, or a total of

approximately 150,000 tank cars. The preference for tanker and pipeline transportation in recent years has also had an effect upon the efficiency of tank car operation. As a result, when the oil crisis arose, the petroleum industry was not keyed to rail transportation and as a consequence there was no organized mass rail movement, tank cars in service were not utilized to the maximum and many cars were idle.

Change in Practice Permits Record Movement

When the need for the transportation of oil arose early in 1941, the railroads, the car-operating companies and the petroleum industry were confronted with the problem of converting existing practices into a highly organized and efficient scheme of operation that would bring about the maximum utilization of equipment and facilities. The program which was adopted to revive the movement of oil in tank cars provided that the railways would spot and move cars promptly and handle loaded and empty cars on expedited schedules. The petroleum industry was called upon to extend loading and unloading facilities, load and unload cars seven days a week instead of five, and use the most direct and quickest routes from point of origin to destinations. In addition the program provided that consideration be given to the efficient use of tank cars transporting other liquid com-

modities such as alcohol, benzol, toluol, turpentine, molasses, vegetable oils, etc., as well as cars owned and leased by the railroads to handle petroleum products consumed by them. At the same time it provided that all bad order cars that could be put into safe operating condition be repaired and that cars with arch bars be permitted to operate in limited service.

The results accomplished thus far have greatly exceeded anticipations of a year ago. A fact-finding committee of the American Petroleum Institute reported in June, 1941, that the increased efficiency that could be brought about by the program would produce sufficient tank cars to move 200,000 to 275,000 bbl. (1,000-1,300 carloads) of petroleum a day from Texas to the Atlantic seaboard.

At the same time, the Association of American Railroads estimated that the railroads could move 200,000 bbl. (1,000 carloads) a day from Texas and Louisiana, in addition to existing traffic.

A few weeks after these forecasts were made, the railroads began to deliver large quantities of oil and since the first of this year, have increased their deliveries from 71,400 bbl. (340 cars) a day to 809,430 bbl. (3,854 carloads) a day for the week ending August 8, 1942. The performance of that week is almost four times that of the forecasts referred to above. This 809,430 bbl. is 60 per cent of the oil requirements of the East which, it is estimated, will amount to 1,375,000 bbl. (6,550 carloads) a day during the final months of 1942.

In 1940, according to the American Petroleum Institute, the use of gasoline, light fuel, kerosene, heavy fuel and lubricating oils in the East totaled 505,922,000 bbl., an average of 1,386,000 bbl. (6,600 carloads) a day. Of this amount 500,610,000 bbl. or an average of 1,371,000 bbl. (6,530 carloads) a day were carried to the East by tankers from Gulf California and foreign points. Of this daily average of 1,386,000 bbl., which moved before gas rationing was placed in effect in the East, only about 300,000 bbl. were gasoline, while 400,000 bbl. were crude oil and 400,000 bbl. were light and heavy fuel oils.

Oil is Loaded on 15 Railroads in Six States

According to reports issued by the Petroleum Coordinator, 26,981 cars of oil for the East were loaded in that week by 31 companies in Mississippi, Louisiana, Texas, Oklahoma, Kansas and Illinois. This oil is routed by shippers through the New Orleans, La., Memphis, Tenn., St. Louis, Mo., Kansas City and Chicago gateways, the St. Louis gateway handling the most. The originating carriers include the Kansas City Southern; the Illinois Central; the Southern; the Southern Pacific; the Louisville & Nashville; the Missouri Pacific, including the International-Great Northern, and the Gulf Coast Lines; the Missouri-Kansas-Texas; the Texas & Pacific; the St. Louis Southwestern; the St. Louis-San Francisco; the Atchison, Topeka & Santa Fe including the Gulf, Colorado & Santa Fe; and the Chicago, Rock Island & Pacific. In some instances intermediate carriers are used between the originating carriers and the gateways. Among the trunk line railroads handling this oil from the gateways are the Seaboard; the Atlantic Coast Line; the Southern; the Baltimore & Ohio; the Pennsylvania; the Wabash; the New York Central; the Chesapeake & Ohio; the New York, Chicago & St. Louis; the Erie and the Grand Trunk-Canadian National.

The destinations of the oil are navy and army locations, refineries, distribution stations, and individual plants and buildings at more than 3,000 points in the 17 eastern states, from Florida to Maine. Because of

the large number of destinations, practically every railroad in the 17 eastern states is a destination carrier.

The many companies loading oil are scattered over a large area, where many of the loading racks are limited in size. Prior to August 1, when new schedules were adopted, cars were dispatched as soon as they were loaded and were handled in regular trains. When the number exceeded 24 cars, they were operated as solid trains. The trunk lines dispatched the solid trains without passing them through yards; consolidated small lots of tank cars into solid trains, some of which contained as many as 100 cars; and handled some tank cars in regular freight trains. Between 60 and 75 per cent of the cars handled by the trunk lines were moved in solid trains.

Oil Moves on Fast Schedules

Cars in regular trains, as well as those in solid trains, were operated on manifest freight train schedules and the switching of cars and the movement of solid trains were given priority over the movement of civilian traffic. Although some oil cars and trains moved on faster special schedules, the scheduled running time of normal freight service reflected the speed at which most of the oil shipments were handled by the railroads. Thus, the scheduled running time for the 851 mi. from Houston, Tex., to St. Louis was 48½ hr. and 70 hr. for the 1,050 mi. from St. Louis to New York, or 108½ hr. for the 1,865 mi., from Houston to New York via St. Louis, an average of 17.2 m. p. h. Switching time at St. Louis made the total time 110 hr. The turnaround time for cars was about 15 days.

The scheduled running time for the 290 mi. between St. Louis and Chicago was 12 hr. and 50 hr. for the 908 mi. from Chicago to New York, or a total of 110½ hr. for the 2,013 mi. from Houston to New York via Chicago, an average of 18.2 m. p. h. Terminal delay on this route amounted to about three hours. The turnaround time was about 16 days. The Chicago, Rock Island & Pacific handled oil on a schedule of 60 hr. for the 1,372 mi. from Houston, Tex., to Chicago and 36 hr. for the 992 mi. from Calvin, Okla., to Chicago.

Probably the most outstanding route and schedule was that from Texas City, Tex., to Boston, Mass., via the Atchison, Topeka & Santa Fe, the Grand Trunk Western, the Canadian National, the Central of Vermont and the Boston & Maine. The scheduled running time for the 1,401 mi. from Texas City to Chicago over the Santa Fe was 65 hr., while that for the 1,130 mi. from Chicago to Boston was 55½ hr., making a total of 120½ hr. for the 2,531 mi., an average of 21 m. p. h. Most of the oil shipments over this route were handled in special trains on the Santa Fe, while from Chicago east they were handled mostly in regular trains. The elapsed time eastbound was about 5½ days while empty cars were returned from Boston to Texas City on manifest schedules in seven days. Spotting, loading, unloading and assembling required about 4½ days, making the turnaround time about 17 days.

New Schedules Placed in Effect

On August 1, a "block system" of operation and 78 schedules over specified routes were set up to further expedite the movement of oil. About two-thirds of the cars handling petroleum products to the East will move under this block system while the remainder, small lots, will continue to move as heretofore. Under the block system, which has been approved by the Office of Defense Transportation and the Car Service division of the

Association of American Railroads, traffic managers of oil companies will co-ordinate their routings individually and with those of other shipping companies in the same localities so as to set up large "block" and solid train movements over certain specified routes to eastern destinations or break-up points. Prior to August 1, competition among the railroads influenced the routing, with the result that all routes were not utilized to their maximum capacity. Also, at some points, cars were dispatched at frequent intervals and handled in regular or solid trains while at other points they were not moved until a number had accumulated. Under the new plan, cars are dispatched from all points each evening as blocks in regular trains or as solid trains, with the result that the number of solid trains is materially increased, both from the originating territory and from connecting points where blocks of cars are consolidated.

The railroads, under the new plan, have set up schedules for the established routes which eliminate delays in yards and terminals and at interchange points. They are also returning empty cars in blocks or solid trains on schedules that are comparable with those of loaded movements.

To simplify the administration of the plan, a number has been assigned to each route, which serves as a continuous identification for all records and reports. The initial G added to the number represents the going or

recommendation calling for a reduction in the lay-over time of empty cars. Under the plan, no more than one day's supply of empty tank cars can be held at refineries or at water and pipeline terminals. Refineries may, however, hold two days' supply of empty tank cars if these are to be used to haul aviation gasoline, aviation gasoline components, special naphthas, toluol and toluene.

Railroads Must Serve Many Destination Points

Another problem which has not yet been completely solved, is the situation in the destination territory. At the time the demand for rail transportation of oil arose, the major destination points were in harbors and were equipped only for the unloading of tankers. From these main receiving points, the oil was then moved by rail or truck to points of consumption. The shift from tanker to rail service changed the distribution system in the East, with the result that the railroads now handle the deliveries as well as the cross country movement. To make this possible, it has been necessary to construct a large number of tank car unloading facilities and to extend railroad tracks.

The inefficiency of distribution in the East has been realized for some time and prompted Mr. Eastman to point out to Senator Maloney of Connecticut in May the necessity for getting the greatest use out of a limited

Symbol	From	To	R.R.	Mileage	Time (Hr.)
1	Arlington, La.	Chicago	I.C.	891	60
	Chicago	Philadelphia	B.&O.	904	46½
				1,795	106½
3	Baytown, Texas	Dupo, Ill.	M.P.	870	47
	Switching at St. Louis		T.R.R.A.		4
	E. St. Louis, Ill.	Buffalo, N. Y.	N.Y.C.&St.L.	715	37
	Buffalo	Bayonne, N. J.	L.V.	444	23½
				2,029	111½
77	Texas City, Texas	Memphis, Tenn.	M.P.	610	37
	Switching		U. of M.		4
	Memphis	Atlanta, Ga.	N.C.&St.L.	527	22
				1,137	63
58	Texas City	Chicago	A.T.&S.F.	1,335	66¾
	Switching				4
	Chicago	White River Junc., Vt.	G.T.-C.N.-C.V.	994	41
				2,329	111¾
	Chicago	Willimantic, Conn.	G.T.-C.N.-C.V.	1,148	48
				2,483	118¾

loaded trip, the initial R the return or empty trip and a number, 1 to 31, the day of departure.

The 78 schedules involve 30 points of origin in the oil territory and 30 destination or break-up points in the East. A few of the schedules are shown in the accompanying tabulation.

Loading is a Problem

One of the problems of rail transportation of oil on a large scale, is that of loading at origin. When the demand for rail movement arose, loading facilities were limited and it was necessary to construct new and extend existing loading racks, which, in turn, required the building and extension of rail spurs. Because the loading racks of the many oil companies were scattered, adequate switching service had to be arranged.

Although much improvement has been made in loading at origin, conditions as late as May required several days' supply of empty cars. Petroleum Co-ordinator Harold L. Ickes, recognizing this bottleneck, issued a

tank car supply and that in the case of New England, this can best be done by train lot movements from the point of origin to a single terminal at which the cars can be unloaded and started back empty, also in solid blocks, within 24 hr. The oil then, according to Mr. Eastman, can be distributed from these central terminals in tank trucks. Mr. Ickes, in discussing the problem at that time, urged oil suppliers to obtain their stocks from available supplies nearest to the point of use. At the same time, an amendment to his formal recommendation called upon suppliers who import petroleum products into the east coast states to fill their requirements by shipping the oil or products "from that point where there is available supply—which involves the shortest railroad haul."

Although oil receipts in the East continue to establish new records, there has been some question as to the maximum amount that the railroads can handle. Ralph Davis, deputy petroleum co-ordinator, testified before the House committee in May to the effect that while the railroads may be able to carry as many as 800,000 bbl.

of oil a day during the summer months, they could not be expected to continue this load for any length of time during the fall because of an unexpected increase in other loadings.

The volume of oil that can be transported by rail depends upon the number of cars that can be used, the efficiency of loading, unloading, distribution and train operation and the priority given oil traffic. An improvement in any one will increase oil deliveries. An increase in the number of cars in the pool from 62,000 at present to 80,000, by the addition of new or the transfer of existing cars or the employment of mareng-lined box cars, such as are being tried out on the Pennsylvania, would provide equipment for the delivery of 1,045,000 bbl. or 4,976 carloads a day on the basis of present performance.

On August 3, owners and operators of tank cars were called upon by the Office of Petroleum Co-ordinator to contribute 12.5 per cent of their tank cars in service east of the Rocky Mountains, other than cars engaged in delivering crude oil or products into District 1 from other districts. It is estimated that this order will transfer about 5,000 cars from the Middle West and will bring the number of cars used in eastern service to 67,000. If the turnaround time, which formerly averaged 9 days for short distances, 16 days for 2,000 mi. and 17-20 days for 2,500 mi. can be reduced to an average of 12 days by cutting the loading, unloading and transportation time, the 62,000 cars now in service would have a delivering capacity of 1,084,860 bbl., or 5,166 carloads a day and 80,000 cars, 1,400,000 bbl. or 6,666 carloads a day.

Limiting the Destination Points Will Help

Under Mr. Eastman's plan for limiting the number of destination points, supplementing rail haul with truck distribution and employing solid train operation, the amount of oil that can be delivered is even greater. On the basis of a 10-day turnaround for distances up to 2,000 mi., which would provide 8 days for the movement of solid loaded and empty trains and 2 days for loading and unloading, 62,000 cars, each carrying 210 bbl., could deliver 1,302,000 bbl. or 6,200 carloads a day, and 80,000 cars, 1,680,000 bbl. or 8,000 carloads a day.

Whether such an operation could be conducted for any length of time depends upon the priority given oil traffic. If the movement of civilian goods is given preference over oil when war traffic reaches its peak, the movement of the many oil trains involved in such an operation may be curtailed for lack of locomotives. Furthermore, even if the number of locomotives should be adequate under these conditions, it is possible that war and civilian traffic may reach such proportions as to interfere with the operation of solid oil trains on fast schedules.

However, a statement made by W. E. Callahan, manager of the Tank Car section of the Association of American Railroads, at a meeting of representatives of petroleum, car and railroad companies at Chicago on August 12, indicates that under the block system the railroads will be able to handle a larger volume of oil if shippers and receivers will control the loading and unloading time. He stated that after the block system is perfected, the number of rail routes will be narrowed to 60. If only one 100-car train is operated over each of the 60 routes each day it will mean the delivery of 1,260,000 bbl. or 6,000 carloads of oil a day at Eastern destination or break-up points. Such operation will constitute no insuperable problem for the railroads even during the winter months.

Missouri Pacific Office Yields Scrap

EMPLOYEES in the general offices of the Missouri Pacific Lines in St. Louis found more than 1,000 lb. of scrap in one day in a scrap hunt that extended into every nook and corner of the company's 22-story office building. Nearly 2,000 men and women are employed in the building and all of them were asked to search through desk drawers, filing cabinets, closets and all out-of-the-way places for metal which they de-



Missouri Pacific Girls Collecting Scrap at St. Louis

posited while on their way to lunch, in large wire waste baskets that had been placed on the ground floor lobby. Each basket carried a sign reading: "The more you pile it here, the more pilots over there."

In the collection were hundreds of metal advertising novelties, accumulated over a period of years—paper weights, ash trays, calendars and memo pad bases. The assortment also contained scores of discarded holders for dictating machine records, unused steel partitions for desk drawers and filing cases, broken chair springs, a vast assortment of bolts and nuts that had been used as desk weights and several smoking stands. Several officers gave up metal book ends.

The general office salvage drive was a by-product of the Missouri Pacific Lines' scrap collection campaign which has been greatly intensified since the country's entrance into the war, producing more than 32,000 tons of scrap during the first six months of this year.

WAR SPURS CONSTRUCTION IN MIDDLE EAST—Railway construction involving 10 projects and about 700 mi. of new line is currently under way in the Middle East, reports The South African Railways & Harbors Magazine. Construction units from the South African Railways are employed in the work, along with local labor and some American engineering groups. The most extensive project is a 175 mi. line between Palestine and Syria that will complete the standard gage rail connection between western Europe and Egypt via Turkey. Other projects include a steel swing bridge across the Suez Canal; a rail by-pass of the River Nile shallows; a railway from the Sudan to Eritrea, in East Africa; and extensions of military railroads in the Transjordan and Egyptian deserts.

Truck Co-ordination Saves Cars



Billboard and Other Advertising Has Promoted T. & P. Co-Ordinated Train-Truck Service

T. & P. highway subsidiary makes compliance with O. D. T. Order No. 1 easy—Saves hundreds of car-days

COMPLIANCE with O. D. T. Order No. 1 presented no difficulties to the Texas & Pacific. In fact, no revision of operations was necessary to comply with the order. Because its rails are paralleled with the co-ordinated truck service of the Texas & Pacific Motor Transport Company, its merchandise cars are loaded to capacity and forwarded only to and from large jobbing centers which have been selected as concentration and distribution points. Each car contains merchandise for several local points and such cars in most instances were showing a much higher average rate of loading than that demanded by the O. D. T., long before Order No. 1 was issued. Through this procedure, many car days are saved because cars do not get "marooned" at local stations on the T. & P.

Moreover, the transport company is also complying with the truck regulations of the O. D. T. Since the area served is largely a consuming territory, the transport company was impelled from the start to avoid empty truck mileage and arrangements were worked out whereby these trucks add to their loads by hauling cotton to the local compresses along the line. The transport company further aids the railway by handling mail and express on its trucks for many local points, thus saving many stops for passenger trains operated by the railway.

The Texas & Pacific pioneered in rail-highway co-

ordination in its section of the country, and its operations have been growing steadily, until now its routes parallel all of the railway except a few branch lines. For the first six months of 1942, l.c.l. tonnage on the T. & P. increased 294 per cent over the same period in 1935. The subsidiary company operates intercity service and also performs pick-up delivery service at such important centers as El Paso, Fort Worth, Shreveport, Alexandria and at several smaller cities and towns. It operates 2,653 route miles of over-the-road service and, in connection with rail service, provides overnight delivery from every jobbing center on the T. & P. to every point within its normal trading area. In many cases, this includes distances of 400 miles or more.

The system is set up on the basis of certain specified concentration and distribution points, to and from which heavily loaded cars of merchandise are operated. The cities of New Orleans, Shreveport, Dallas, Fort Worth and El Paso serve as distribution points at which cars are loaded. Shreveport, Dallas and Fort Worth also serve as concentration points to which cars are loaded in addition to the following smaller but important jobbing centers to which cars are loaded for distribution by truck to local stations: Addis, La., Alexandria; Abilene, Texas, Sweetwater, Big Spring, Monahans, Longview, Marshall and Texarkana. This system of con-

centration and distribution is indicated on the accompanying map.

The trade rivalry between the large distribution centers of Dallas and Fort Worth, which serve approximately the same trade area, and the necessity for giving equivalent service to each formerly led to the operation of a number of lightly loaded merchandise cars. Under the co-ordinated plan, this has been eliminated, for cars for certain destinations now start from Fort Worth, while cars for other stations start from Dallas. A shuttle trucking service over the 30 miles between the two cities not only permits heavy loading of these cars, but gives each city exactly the same service that the other one receives.

A Complete Service

The transport company handles freight of its own; it handles co-ordinated rail-highway traffic; and it has established interchange with some 90 common carrier truck lines. In general, the truck routes parallel the railway, but there are several off-line routes. Many of these serve war production industries or airplane plants.

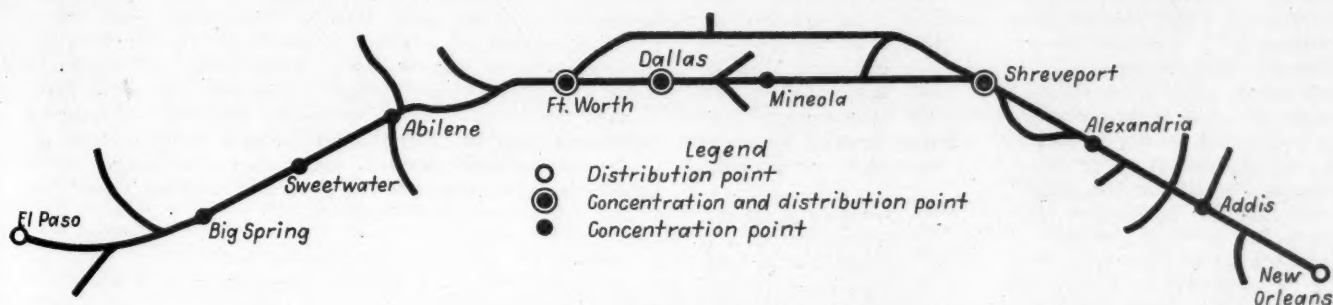
Between Shreveport, La., and Alexandria, three routes are operated. Two are local routes west of the Red river serving the two alternate routes of the parent railway. The third operates east of the river in the territory of another railway. This latter route is used only for through merchandise, no pick-ups or deliveries being made at local stations en route. Near the west end of the line is a similar through operation, between Big Spring, Texas, and Hobbs, N. M. This route does not follow the railway, as the highway is about 62 miles shorter, and serves the oil fields, where time is important. On this route also, no local pick-ups or de-

part-time agents at the other 2, while the other motor carriers maintained full-time agents at only 5 of the towns, part-time agents at 18 others, and no agents in 6 of the towns.

The T. & P. and its transport company showed also that they maintained stations in each of the 29 towns, while the other motor carriers operated stations in only 5 of the towns, accepted freight in a somewhat casual and unreliable fashion at filling stations, groceries, etc., at 18 other towns and had no facilities whatever at the other 6 towns. The T. & P. and its transport company further showed that they would maintain pick-up and delivery service at all 29 towns, whereas the other motor carriers could do so in only 5 towns. Complete statistics as to telephone listings and service in general completed the exhibit, which, as in many previous cases, supplied a strong argument in support of the application, which was granted.

The parent railway has done a considerable amount of effective advertising of its freight services, and the transport company has also followed this practice. The principal media used consist of billboards throughout the territory and advertisements in each local newspaper on the railway every month. In addition, a wide distribution of blotters is made, with the local agent's name shown in every case. Direct mail literature is used, as well as large cardboard sheets giving, in concise fashion, the rates and service available from each important town. Stickers are also distributed, to be pasted on orders, requesting T. & P. routing.

An alert organization, quick to sense changing conditions, has been responsible for the success of this co-ordinated operation. The presence of the subsidiary company and the changes in operation tending toward heavier loading of merchandise cars already brought



Truck Service Parallels the T. & P.

liveries are made in the territory of other railways. There is a further off-line route between Monahans, Texas, and Imperial, through an area not served by any other railway.

Alert Organization

The operations of the transport company and the railway, as well as the official personnel, are completely co-ordinated. The company has been successful in obtaining permits for truck operations, because of the manner in which such applications have been presented to the various commissions. A recent application, involving 29 local stations, will serve as an example. One of the exhibits presented was a statement of the service that could be rendered by the transport company and the railway in comparison with other motor carriers. This showed that the T. & P. and the transport company maintained full-time agents at 27 of the 29 towns and

about, made the Texas & Pacific one of the few railroads in the country that did not have to revise its merchandise operations to get into step with O. D. T. Order No. 1. In fact, during the month of June, 1942, the daily average loading of merchandise cars at Dallas was 22,357 lb.; at Fort Worth, 22,688 lb., and for the system, 20,586 lb.

Co-ordinated rail-truck service has not only resulted in the heavier loading of merchandise cars but it is saving 4,275 Class 1 box cars monthly and a great number of other box cars heretofore used in the loading of small lots of cotton into compresses, thereby releasing such equipment for use in the war effort. A great saving of empty car miles has been accomplished and the movement of local freight trains expedited by relieving them from the handling of l.c.l. shipments, thus furnishing better service at way stations on carload freight. In addition, the movement of l.c.l. shipments has been expedited.

New Books...

Commodore Vanderbilt, by Wheaton J. Lane. 357 pages. 8 $\frac{1}{8}$ in. by 6 in. Bound in cloth. Published by Alfred A. Knopf, New York. Price \$3.75.

The three richest men in America died within a few months of each other in the middle 1870's—William B. Astor, landlord; Alexander T. Stewart, merchant, and Cornelius Vanderbilt, colorful pioneer in the development of water and rail transportation in America. Of these Vanderbilt achieved by far the widest reputation in his own day, when he was in the spotlight as much as Rockefeller and Ford were later, and considerable fragments of that "Vanderbilt legend" have survived down to the present—convincing evidence of the accuracy with which his contemporaries assessed his place among the founders and developers of the American system of enterprise. Curiously enough, the first objective and carefully documented biography of this real "captain of industry" has appeared only this year in this appropriately sub-titled "Epic of the Steam Age." Readers will discover why this "imperious dictator with hard business sense" won the constant attention and half-grudging admiration of his fellows in a period when self-made men were exploiting their opportunities in every city and town and every field of business, unfettered by such restraints as income taxes, priority ratings, the closed shop, the Security and Exchange Commission and other regulatory bodies.

The first part of the book builds the background for the story of the Commodore's achievements in railroad finance and management, which occupied only the final quarter of his eventful career. The high points of his Horatio Alger-like rise from poverty to power are fairly well known, perhaps, but the author tells them again with convincing detail and restrained feeling—how Vanderbilt borrowed a hundred dollars when he was sixteen to set himself up in business as a ferryman between New York and Staten Island, how his skill and industry won for him the reputation as the ablest boatman in the harbor, and how he became master of a fleet of steamships that extended his influence and the sources of his wealth from New York Bay to the Hudson, to Long Island Sound, to the gold rush trade through Panama and Nicaragua, and finally to the trans-Atlantic mail lines.

When the Civil War curtailed opportunities in the steamship business the Commodore turned his attention to railroads, but from the facts related in this volume it becomes clear that this was not a casual move—induced, as many accounts have suggested, by an accidental entanglement in the finances of the New York & Harlem—but a carefully planned program, based on shrewd appraisal of the prospects for a tremendous and profitable expansion of railroad patronage.

The last part of this book deals with the combination of spec-

tacular stock market activities, political manipulations and practical achievements in developing railroad capacity that marked Vanderbilt's creation of the New York Central and its relatively prosperous course through the troubled era of "unfettered trade and unrestrained competition" in which his greatest successes were won. Even a casual familiarity with railroad history embraces the principal events of this story of tactics not always above-the-belt, of dramatic intervals of feast and famine for stockholders, customers and scandal-hunters. But more solid fare is served here as well, in a well-balanced account of railroad strategy that pictures the Commodore—with some help from circumstances for which he was not responsible—as the builder of a vital transportation system. If the author does not subscribe to the sentiment expressed in the funeral eulogy, in which Cornelius Vanderbilt was "numbered now with the saints in glory everlasting," he has nevertheless pictured a personality whose virtues and shortcomings were somewhat more evenly balanced than the common tradition has suggested, and in the process has added welcome detail to the historical background of the lusty youth of the New York Central.

The Great Southwest Strike, by Ruth A. Allen. 174 pages. 8 $\frac{3}{8}$ in. by 5 $\frac{7}{8}$ in. Bound in paper. Published by University Publications, The University of Texas, Austin, Texas.

Prepared by a professor of economics of the University of Texas, this book outlines the background, events, and consequences of a strike of employees of the Missouri Pacific, Texas & Pacific, and associated lines, called in 1886 by the mushroom organization called the Knights of Labor. On these lines "almost no traffic moved for a period of 30 days and that meant that towns were cut off from coal and other supplies. St. Louis was for a time in almost as much distress as if besieged by a hostile army. Perishable goods rotted on the tracks. Prices of provisions soared, coal reached the high price of \$40 a ton, and many factories and all the flour mills closed down. Goods from the north and east were sent to Kansas City and from there went down the Missouri River on boats to escape the labor blockade."

While the author appears to have explored the available sources of information very thoroughly, it cannot be said that the story is told with as much sympathy for the railroad managements as for the union leaders. Occasional errors can be found, as on page 12, where it is stated that Jay Gould in 1882 "completed the *Southern* Pacific which connected the Pacific Coast with New Orleans through a southern route which passed through El Paso, Fort Worth, and Marshall"—a statement repeated on page 14. Nevertheless the book brings together useful bits of historical material, and gives a clear outline of the railway labor relations prevailing on the so-called Gould lines during that era of rapid expansion.

* * *



**"Pennsylvania Limited"
Eastbound Passing Through
Latrobe (Pa.) Station at
Better Than 65 M. P. H.**

Photo courtesy C. L. Reinhardt

Railroads-in-War News

Washington Sees "Rubber" Box Car

New Mareng cell may be used
to haul additional oil
to east coast area

A new type of box car—lined with synthetic rubber—made its initial appearance in Washington, D. C., this past week, and government officials are hopeful that it may be used as a part of the solution of the problem of transporting petroleum to the east coast shortage area. Filled with six cells made of "Mareng" which is fabricated from a synthetic rubber known as "Thiokol," the car was brought to Washington for inspection by Joseph B. Eastman, director of defense transportation, and other high government transportation officials.

A statement from the Glenn L. Martin Company, Baltimore aircraft builders, who developed the Mareng cell, said that the car will be placed in service immediately transporting oils, but that the nature of the tests to which it will be subjected will be determined by the Association of American Railroads, whose representatives will have an opportunity to observe it under actual operating conditions. It is also understood that the Bureau of Explosives will take part in the tests, and the car must meet the approval of the Interstate Commerce Commission.

Martin officials are optimistic over the outlook for the practical use of the cells in box cars, but Reid B. Gray, chief of the Martin laboratories, warned against over-enthusiasm, saying that the use of the car would not solve the east's oil shortage.

A 50-ton box car is being used for the first installation of the Mareng cell. It contains six of the cells, which, when filled, resemble huge packing cases. The oil is loaded through a pipe in the top of the car which feeds all the containers. A single discharge valve in the bottom of the car unloads it. The cells are collapsible, and when not in use, can be rolled up. It was suggested that future studies might develop means to get two-way use out of the box cars by stacking the cells in the car when the oil is unloaded and using it for other freight on the return trip.

Each of the cells have 2,500 gallons' capacity. Only two cells of the test unit were filled with oil on the 700-mile trip from Indiana. These filled cells, it was said, were located over the car trucks, and thus were subject to the maximum road-bed vibration.

The cells, which are the outgrowth of the original self-sealing fuel tank for airplanes, can be used in wooden barges for

Gross Becomes Major General

Brigadier General Charles P. Gross, chief of the recently-organized Army Transportation Corps, became a major general on August 17 when the Senate confirmed his promotion which was submitted by President Roosevelt last week. A photograph of General Gross, together with a sketch of his career, appeared in the *Railway Age* of August 15, page 260, where the organization of the Transportation Corps was described.

inland waterways and for other types of railroad cars, according to Mr. Gray. Mr. Gray also said that he had been assured that there is an ample supply of synthetic rubber from which the cells are constructed and that manufacturing facilities are already available.

Broader Storage-in-Transit Privileges

To provide additional storage facilities in coastal areas for military purposes, the transcontinental railroads have agreed to broaden their storage-in-transit privileges to include frozen fruits and vegetables originating on the Pacific Coast, according to the Office of Defense Transportation.

The new arrangements will permit frozen fruits and vegetables to be forwarded for storage to interior points in the Western, Southern, and Eastern territories. The arrangements were negotiated with the railroads, through their freight traffic associations, by ODT's Division of Rates at the request of the Division of Storage.

ODT Appointments

Norton P. Willis, of Chicago, has been appointed chief of a newly-established Export Traffic Section in the Office of Defense Transportation's Division of Railway Transport. Mr. Willis, until recently ODT's deputy associate director of rail-truck coordination, in St. Louis, "will analyze rail movements into port areas, and keep a daily check through ODT field representatives on all rail facilities at the ports." Before joining ODT, he was assistant general superintendent of transportation, Chicago, Burlington & Quincy.

Also announced was the appointment of James F. Haley, of Chicago, as assistant to O. C. Castle, who is in charge of the Freight Service Section, Division of Railway Transport. Mr. Haley came to ODT from the Illinois Central, where he was office manager to the freight traffic manager.

Maximum Loading Required by ODT

General Order No. 18 will call
for full capacity use
of freight cars

Moving to secure the maximum loading of cars carrying civilian traffic, the Office of Defense Transportation has issued General Order No. 18 which will prohibit railroads from accepting for shipment, with certain exceptions, any freight cars not loaded either to their marked load limit or to their visual capacity. The order, issued August 15 to become effective September 15, was drawn up in collaboration with representatives of the National Industrial Traffic League and the Regional Shippers' Advisory Boards.

"The order is drastic, but war traffic conditions demand it, particularly for the most efficient use of motive power," ODT Director Eastman said in an explanatory statement. "Conditions are such," he added, "that even now railroad motive power is being used close to capacity. The heavier loading of the cars . . . will do more than save cars. It will save motive power, a result presently more important."

Tank cars, flat cars, and cars containing l. c. l. are excluded from the order's provisions. Also excepted from the maximum loading regulations are shipments containing airplanes, marine equipment, Army ordnance, and tools, machinery or materials used in ordnance and other war production; shipments of cotton and cotton linters in bales; shipments by or consigned to the armed services; shipments of explosives; and shipments authorized by ODT general or special permits. In addition, the provisions of the order may be disregarded in cases where the maximum loading would create a transportation hazard, or result in damage to lading. Commodities which require refrigeration, heating or ventilation are not to be loaded beyond the refrigerating, heating or ventilating capacity of the car.

There are other specific commodity exceptions and general exceptions, one of the latter stipulating that the order shall not apply "to shipments as authorized by and in accordance with any special permit issued without unreasonable or undue discrimination or preference by the general manager or division superintendent of the initial rail carrier in a specific case where, in his sound judgment, because of the unusual character of the lading or of unusual circumstances or of undue car detention, he believes compliance . . . would result in inefficient use, or retard the effi-

(Continued on page 316)

Oil Loadings Hit New Weekly High

Carriers haul 809,430 barrels a day into the eastern seaboard area

With more than 67,000 tank cars now in the east coast service, rail shipments of oil to the seaboard reached the new record rate of 809,430 barrels daily during the week ended August 8, according to an announcement by Petroleum Coordinator for War Harold L. Ickes.

This figure tops the previous record of 800,100 barrels a day, attained in the week ended July 25, and exceeds by 25,080 barrels the average volume moved daily during the week of August 1. In handling the movement the 31 oil companies reported loading 26,981 cars.

On the basis of an average of 210 barrels per car, these loaded cars carried 5,666,010 barrels of petroleum and petroleum products during the week. Figuring the average turn-around time per car as 17 days, which was the basis formerly used, it was calculated that there were 65,500 tank cars hauling petroleum to the east coast during the week ended August 8. However, by actual count, it was pointed out, the number of tank cars in the service during that week proved to be 67,411.

Meanwhile, the Office of Defense Transportation has revealed that as of August 14, approximately 300 oil trains were speeding eastward on ODT solid-train movement schedules over the tracks of more than 40 railroads.

While some 15,000 loaded tank cars are moving toward the seaboard in trains averaging 50 cars, at least 300 solid trains of the tank cars that contributed to the week's record are rolling empty toward the southwestern fields, the ODT statement pointed out.

At the same time Senator Lodge, Republican of Massachusetts, has introduced in the Senate S. 2716, which would establish a national petroleum administration to provide nation-wide control of petroleum, and to provide for the coordination and efficient administration of the functions of the government relating to petroleum. In explaining the bill, Senator Lodge said that it would confer a grant of power sufficiently broad to enable the government to compel petroleum shipments into critical areas.

Senator Lodge also quoted a telegram to him from Joseph B. Eastman, director of defense transportation, in which the latter had declared that the oil shortage in the east was "not a matter to be controlled alone through distribution of tank cars, because neither the railroads nor I can bring buyers and sellers together nor require shippers to make consignments to a particular destination."

Revision of OPA Price Order

Revision of federal price controls over service industries and trades was announced last week by Price Administrator Leon Henderson. Included in the indus-

tries affected are transportation agencies performing services subject to OPA regulations, such as non-common-carriers, stevedoring companies, carloading and consolidating companies except those serving the general public as common carriers.

The revised regulation, as Mr. Henderson described it, "represents one more step in our effort to simplify the application and administration of price control." In other words, "the basic principle of establishing ceiling prices at the highest levels of last March remains unchanged, but the mechanism has been simplified."

Railroad Capacity Worries New York Mayor

Expressing his fears that a shortage of coal may develop this winter, due to inadequate transportation capacity, particularly on the railroads, Mayor La Guardia of New York has suggested that the city may soon require landlords to ration hot water to tenants, in order to save fuel, and reports are in the air that heat also may be curtailed. Respecting warnings from many quarters of a scarcity of fuel oil for furnaces in the states along the Atlantic coast, many building operators are said already to have converted their heating plants to burn coal, but few of them have much space for fuel storage, depending on the coal distributors for a steady supply, which the mayor fears a transportation shortage might interrupt.

Utilities, including producers of steam supplied to many large buildings that do not maintain their own heating plants, are reported to have large stocks of coal on hand.

Railroads Get Reductions in War Risk Insurance Rates

As a result of negotiations conducted by the Fire Protection and Insurance Section of the Association of American Railroads, that organization has been advised that the War Damage Corporation has modified some of the classifications contained in its regulations pertaining to railroad properties. The original classifications of railroad property for war risk insurance were set out in the *Railway Age* of June 6, page 1124.

As originally drafted, the Corporation's classification for railroad properties made no provision for credit for fire-resistive construction, although such credit was allowed in other industrial classifications. The Corporation now has modified its regulations so as to allow the railroads the classification and rate credit as accorded properties of other than railroad ownership.

The regulations as originally approved also required that piers, wharves, and warehouses occupied by railroads be classified as railroad property, while similar structures adjoining those occupied by railroads may be otherwise classified at a lower rate. As a result of the negotiations the Corporation has now agreed that piers, wharves, and warehouses occupied by railroads will be accorded the same classification and rate credit as similar properties not occupied by railroads.

Moving Troops Has Become Bigger Job

Armed forces have much more equipment than in World War I

The transportation of our armed forces and their equipment is a much bigger job today than it was in the first World War, Colonel E. C. R. Lasher, deputy chief of the Traffic Control Division of the Army Transportation Corps, said in a round-table radio discussion at Washington on August 21.

"This," Colonel Lasher explained, "is because it takes more than half again as much materials and supplies of all sorts to keep a fighting man in the field. This is much more of a mechanized war than the last one. It takes lots of transportation to provide all those trucks and tanks and jeeps and planes that we didn't have the last time, and to keep them supplied and running and flying."

"Every change that has been made since then has increased the transportation load," he continued. "A division uses more guns than it did then, and each gun fires more rounds per minute and there is more weight in each round. All that calls for more transportation. And this is a long-range war, fought all over the world, thousands of miles from home."

Colonel Lasher commented that the movement of troops is not as difficult as the transportation of lend-lease supplies for our Allies. The latter presents more problems, he pointed out, because "there are far more people to coordinate in connection with this type of movement," and because of the "uncertainties of water-borne transportation since the German submarine offensive."

According to Colonel Lasher, there is such coordination between the Army and the railroads today that it is hardly noticeable where one leaves off and the other begins. This, he said, is due largely to the Military Transportation Section of the Association of American Railroads, which, although it is a commercial railroad organization, staffed and financed by the railroads, "works so closely with us that, for all practical purposes, it is a function of the War Department."

Arthur H. Gass, manager of the Military Transportation Section, disclosed that his organization keeps a finger on every military movement by rail so that it will know where the train is at all times. This is important, he stated, because "the Army may want to change the train's destination en route."

Troop movements by rail are secret, Mr. Gass went on. Even the engineer and the conductor on the train do not know where the men are going, he added, and all railroad employees who are entrusted with such movements are instructed not to talk about them.

Speaking of the railroad equipment necessary to move troops and military supplies, Mr. Gass said that to transport a triangular infantry division of about 15,000

men and their supplies requires 65 trains with a total of approximately 1,350 passenger and freight cars, while an armored division of 3,000 vehicles takes about 75 trains of from 28 to 45 cars each.

George A. Kelly, vice president of the Pullman Company, declared that soldiers, sailors and marines are traveling in greater comfort today than they did in the first World War. In the last war, he said, less than 25 per cent of all troops moved by train rode in Pullmans, but today about 66 per cent of them do.

As evidence of the extent to which the Pullman Company handles military transportation, Mr. Kelly called attention to the fact that "on some days, as many as half of all the sleeping cars in the Pullman 'pool' have been engaged in this vital business of moving troops."

There are 7,269 cars in the pool, Mr. Kelly revealed, and of this number, 6,800 are sleeping cars. Eighteen hundred and fifty of these are assigned exclusively for troop movements, he said, but all the rest are available for this purpose whenever needed.

Ask I. C. C. to Deny Carriers' Reverse Gear Petition

The Brotherhood of Locomotive Engineers and the Brotherhood of Locomotive Firemen & Enginemen have asked the Interstate Commerce Commission to deny recent petitions of the Chicago & North Western and the Western Pacific requesting that agency to modify its order of February 28, 1938, so as to extend from September 1, 1942, to December 31, 1943, the time within which they must equip all of their locomotives with a suitable type of power-operated reverse gear.

The carriers had alleged that due to the shortage of materials it is difficult to obtain power reverse gears at the present time and that to take the remaining locomotives out of service at this time to install the gears would cause a shortage of motive power on their lines.

The Brotherhoods contend that the gear can be installed without the necessity of withdrawing locomotives from service for more than 24 hours and can be installed when locomotives are undergoing monthly inspection tests required by the commission's Bureau of Locomotive Inspection or when they are being given a boiler wash. They also say that the gears can be obtained if they are promptly ordered.

ODT Gets Emergency Freight Rate Revisions

Two emergency freight rate revisions designed to facilitate the movement of coal by rail and water to New England have been made at the request of the Office of Defense Transportation. The Chesapeake & Ohio, the Norfolk & Western and the Virginian and their connections have published a new rate on West Virginia coal from the Pocahontas and New River districts to Philadelphia for transshipment outside the capes.

This rate is \$3.87 per gross ton, with related rates from other coal-producing fields. The new rate is a reduction of 39 cents under the track delivery rate to

Philadelphia, and was established as an emergency rate to permit continued movement of coal to New England during the period of incapacity of the Chesapeake & Delaware canal. The canal recently was closed to service through an accident to a bridge span. The rates are scheduled to expire September 5, at which time the canal is expected to be reopened.

At the same time the Virginian has placed into effect a rate of \$4.14 per gross ton on coal moving for transshipment by water to the Edgewater Coal Pier of the New York, Susquehanna & Western, and to the Hoboken pier of the Delaware, Lackawanna, & Western, via Roanoke, Va. This rate, which is to expire on October 10, was established at ODT's request, to make available for movement to New England coal from Virginian mines on the same basis of rates as those applicable via the Norfolk & Western, and the Chesapeake & Ohio. New coal rates via the latter two roads became effective May 1.

ODT on June L.C.L. Operations

"Still holding near the nine-ton mark as the average load of less-than-carload freight per car, the nation's major railroads showed a 1.5 per cent seasonal decline in merchandise tonnage handled during June," the Office of Defense Transportation said on August 18.

All roads reporting, both large and small, under the terms of General Order ODT No. 1, showed 422,553 cars loaded in merchandise service for an overall average of 8.1 tons per car. Class I roads loaded 412,221 cars for an average of 8.9 tons per car. General Order ODT No. 1 established six tons as the minimum weight load for merchandise cars during May and June, with an increase to eight tons on July 1. During the two months in which the 6-ton minimum prevailed, the reporting railroads

* * *



A "Boost Production" Poster

One of a series of pictorial reasons why freight must be kept on the move.

loaded 850,641 cars for an average of 8.1 tons per car. During 1941 the average merchandise load was about 5.3 tons.

Twenty-six Class I roads failed to attain the six-ton minimum in June as compared with 24 which failed to reach it in May. "An investigation," said ODT, "disclosed that failure to attain the minimum was due not to noncompliance with the order, but to various factors covered in the order's exceptions such as operation of cars serving points not reached by other carriers, use of noninterchangeable equipment, the handling of explosives, etc."

The three-mile Milstead R. R. in Georgia continued to top all roads with an average load of 19.3 tons per car, a new record high. The May mark set by the Milstead was 17.2 tons per car. In the standings of the first 10 Class I roads, the Minneapolis & St. Louis, which stood 55th in May, jumped into fourth place. The Pittsburgh & Lake Erie climbed from third place in May to the top of the Class I list. Other newcomers to the first ten are the Texas & Pacific, the Missouri Pacific, and Pittsburgh & West Virginia.

Says Railroads Should Get Sufficient Materials

Allocation by government authorities of sufficient materials for cars and locomotives to enable the railroads to continue furnishing adequate transportation to meet rising war and industrial needs was urged by Ralph R. Luddecke, president of the National Industrial Traffic League, at a meeting in Washington August 14 of the League's Special Committee on Emergency Transportation Matters. At the same time, Mr. Luddecke pledged the continued active cooperation of the shippers of the country, as represented by his organization, in aiding the railroads to obtain the utmost utilization of existing transportation facilities.

"Railroads," he said, "have called upon their reserves of cars and locomotives and transportation capacity. Shippers have worked right with them to get the utmost use out of every car. Government agencies have not instituted the system of priorities which did so much to disrupt transportation during the last war. The result has been transportation adequate for all essential needs.

"That those needs will increase is certain; how much they will increase, no one knows. To meet them, whatever they may be, the railroads have gotten all the new cars and locomotives for which materials could be secured, and have reduced the percentage of cars and locomotives needing repair to the lowest practicable minimum, far lower than was thought possible when the war began.

"To increase railroad capacity to match rising war needs, or even to hold it where it is by keeping the ratio of bad order rolling stock down to the present low figure, the railroads will require materials. Some of these materials, no doubt, also will be needed elsewhere. The allotment of materials to the best advantage of the whole war effort is a grave responsibility of government authorities. There is also a responsibility upon railroads and shippers

to make the best use of the transportation plant.

"It is our hope that it will be found possible to allot to the railroads the materials they must have, and it is our intention to continue to work with the railroads to the utmost, to the end that the war-making power of the nation may not suffer from any lack of domestic transportation."

New Storage-in-Transit Privileges for Export Freight

Railroads have established storage-in-transit privileges on carload export freight at points intermediate to ports, according to the Office of Defense Transportation. The plan, which was negotiated by ODT's Division of Rates at the request of the Division of Storage, is designed to facilitate the movement of export traffic by preventing the accumulation of freight at the ports; it covers all commercial carload traffic, other than bulk freight.

"The new arrangements," said ODT, "will permit flexibility by use of storage facilities strategically located within short running time to the principal Atlantic, Gulf, and Pacific ports and will greatly facilitate the prompt delivery of export traffic to the ports to meet vessels in which cargo space has been allocated." Additional covered and open storage facilities at interior storage points, if required, "will be made available by ODT's Division of Storage."

In order to avail themselves of this storage-in-transit privilege, arrangements will have to be made by shippers or their agents for storage facilities in advance of shipment. Traffic will be forwarded to the storage point on the usual domestic bills of lading at domestic rates from point of origin to the storage point. Such bills of lading must carry the notation "Commercial freight for storage and subsequent exportation within four months, under the terms and conditions of Section 502.42 of General Order ODT No. 16." That is the section that provides for the movement of commercial freight for export under ODT permits. When shipments are moved from the storage point for export, adjustment in the rail charges will be made to the basis of the through rate applicable on export traffic from point of origin to the port, plus the transit charge.

Appleton Succeeds Metzman in Transport Corps

J. A. Appleton, of Newark, N. J., General manager of the New York Zone of the Pennsylvania, has been appointed chief of the Rail Division, Transportation Corps, Services of Supply, U. S. Army. Mr. Appleton, who has been granted a leave of absence to assume his new post, succeeds Gus C. Metzman, who has been recalled from his Transportation Corps assignment to become assistant vice-president and general manager of the New York Central at Cincinnati, Ohio, as announced in the "Railway Officers" columns elsewhere in this issue.

The new head of the Rail Division has been attached to the staff of Major General Charles P. Gross, Chief of the Trans-

portation Corps. Mr. Appleton, a veteran of the First World War, served in France as a captain in the Corps of Engineers, assigned to railroad duties under Brigadier General W. W. Atterbury, Director General of Transportation of the American Expeditionary Forces.

Mr. Appleton, born in 1891 in New York City, is a graduate of St. Paul's School, Concord, New Hampshire, and of Yale University. He has been connected with the Pennsylvania since 1915, when he was employed as a clerk in the Philadelphia, Pa., Terminal division. Following his return from France in 1919, he was named terminal supervisor of the New York division. After serving as superintendent of several different P.R.R. divisions, he became general superintendent of the Northwestern division, with headquarters at Chicago in 1929. Later, he served as general superintendent of the Lake division, at Cleveland, and of the East Pennsylvania division, at Harrisburg. He became general manager of the New York Zone in 1935.

Maximum Loading Required by ODT

(Continued from page 313)

cient use, of cars or locomotives." Weekly reports on all such permits must be made to ODT by the vice-president in charge of operations; and recurrences must be covered by special or general ODT permits.

The order divides freight into two classes, bulk and non-bulk. It provides that where closed cars are used for bulk freight the commodity must be loaded to within 18 in. of the car roof as measured at the sides of the car or to the marked weight limit, whichever is the lesser. In the case of cars with lined or sheathed side walls, the loading is to be confined to a point where the commodity will not spill over the sheathing. Full use of all possible stowage space is required in the loading of non-bulk freight.

Carriers, at the request of the shipper, are required to allow a single stop of a car in transit to enable the shipper to complete the loading, and an additional stop for partial unloading at a point other than the final destination. These stop-offs, however, will not be permitted for loading or unloading of bulk freight of livestock and other live animals. Under the order, carriers and consignors, not exceeding three, may consolidate and ship in a single car from not more than three points of origin, two or more carload consignments of the same or different commodities to not more than three different consignees at one or more, but not exceeding three destinations. Each of the consignments "shall be considered and treated for the purpose of applying rates and charges and rendering transportation service as if shipped in a single car." Intermediate points at which loading is completed, or unloading begun, must be on the direct route of movement of the car. Consolidation provisions will not apply to bulk freight, livestock, animals, poultry, or any freight which might

damage or contaminate other lading in the car.

Carriers are required to publish tariffs setting forth any changes in rates or practices occasioned by the order; although the order specifically states that none of its provisions are to be construed as requiring or sanctioning any changes in the established carload minimum weights, or as requiring or approving increases in transportation rates. With respect to the rate aspects of the situation, Director Eastman had this to say: "The order may, perhaps, be of financial as well as operating benefit to the railroads, and in instances it may impose some extra expense on shippers. The question may arise, therefore, as to whether there should be compensatory rate adjustments. In my judgment, under present war conditions the matter of paramount importance to the country and the shippers is service, now and in the coming months, and that is the objective of the order. It is a war measure. The matter of rates, if it needs consideration, can be left to the normal regulatory processes."

In other parts of his statement, Mr. Eastman praised shippers for what they have done to bring about heavier loading, saying also that the Interstate Commerce Commission "has been very helpful in this voluntary campaign." He conceded that "this has improved the situation materially," adding, however, that "it is generally agreed that an order is necessary to get anything like maximum results."

"At present," the ODT director went on, "the box and refrigerator car supply is fairly comfortable. For this, various things are responsible, including ODT General Order No. 1 with respect to the loading of l.c.l. freight, which is now saving over 65,000 box cars per week and will save even more; orders and activities of the I. C. C.; the fine cooperation of the shippers; and the fact that this year there has been no normal movement of grain from the farms, because elevators and other storage places are filled with grain carried over from last year."

"The railroads are now, however, in the period of the year most favorable to their operations. The normal peak load comes in the fall and is followed by unfavorable winter conditions. War production and traffic movement will continue to increase. So will troop movements. The railroads have had a heavy impost of traffic as a result of the diversion of long-haul traffic which formerly moved via intercoastal and coastwise steamship. Although carloadings have fallen a little below the same period of 1941, there has been a 30 per cent increase in the ton-miles of revenue freight carried. We must anticipate the effect of diversion from trucks as a result of the rubber shortage and the wearing out of trucks which cannot be replaced."

"Our stock of critical materials is limited and must be conserved in every possible way so that the maximum amount can go directly into war production. This means that we must get the greatest possible use out of existing railroad plants. And we must prepare for future contingencies well in advance; we cannot wait until they happen. The order will not avoid need

for additional cars and locomotives, but it will lessen that need and afford shippers substantial insurance against shortages."

The publication of the order a month in advance of its effective date, the ODT announcement said, will give shippers and receivers "an opportunity to make necessary adjustments;" also it will "provide an interval during which the railroads and shippers might have an opportunity to point out specific situations to ODT."

Two More ODT Bus Orders

Two special orders placing bus service between Boston, Mass., and St. Stephen, New Brunswick, and between Fort Wayne, Ind., Indianapolis and Terre Haute, "on a wartime basis" were issued August 17 by the Office of Defense Transportation. A total of 14 such orders now have been issued.

One of the August 17 orders (Special Order ODT No. B-13) affects the Eastern Greyhound Lines of New England; the Boston & Maine Transportation Company; and the Maine Central Transportation Company. Eastern Greyhound and Maine Central are directed to honor each other's tickets, divert passengers and stagger schedules between Boston and St. Stephen, and to pool station facilities wherever practicable. Eastern Greyhound is directed to suspend service between Boston and Concord, N. H., and between Portland Me., and Belfast, and is prohibited from instituting service between Belfast and Bangor, Me. The order freezes the number of schedules to the winter level, with a resulting saving of approximately 45,160 scheduled miles per month as compared with summer service last year.

Companies affected by the other August 17 order (Special Order ODT No. B-14) are the Indiana Railroad Company, A. B. C. Coach Lines, Inc., and the Pennsylvania Greyhound Lines, Inc., serving central Indiana. It also directs the carriers to honor each other's tickets, divert passengers and stagger schedules between all points common to their lines, and to pool station facilities wherever practicable. It further directs that Pennsylvania Greyhound shall limit its operations between Indianapolis and Terre Haute to through schedules extending beyond Terre Haute and that local schedules between these points shall be operated by the Indiana Railroad Company. This order is expected to result in a saving of approximately 64,000 bus miles a month.

Army to Pool Its Tank Cars

Pooling of the Army's railroad tank cars to assure more efficient operation of gasoline shipping facilities has been announced by the War Department. Under the new program, developed by the Traffic Control Division, Transportation Corps, Services of Supply, the cars now are assigned to refineries and so-called loading points, which are storage centers, so that they can be dispatched swiftly and directly to whatever destinations are required. It is expected that utility of the cars will be increased at least 30 per cent, and probably considerably more.

The new program, under direction of the

Tank Car Traffic Branch of the Traffic Control Division, provides for a system of daily reports from the pools and the camps, posts and stations, on cars received and dispatched. If no report is received on a car, an immediate tracer is put out. Thus, the position and status of every car is known at all times.

Under the new procedure, refineries and loading points are provided with an advance estimate of car requirements to meet their War Department contracts. Army establishments then notify them of their needs, and the cars are dispatched to them directly. The cars must be unloaded at the Army establishment within 48 hours and returned to the refinery to prevent undue tie-ups, the War Department announcement stated.

If reports show that a pool has too many cars on hand, the Army establishments sends the empties to another. This means that the new program reduces non-productive transportation of empty cars, it was declared.

ODT Takes Control of Boats Capable of Carrying Oil in Bulk

In a move "to increase the flow of oil to the Eastern Seaboard," the Office of Defense Transportation on August 17 assumed control over all domestic waterway craft capable of transporting liquid cargo in bulk. ODT Director Eastman issued General Order No. 19 establishing a permit system designed to give ODT direction of the movement of petroleum and petroleum products in Great Lakes, inland waterway, coastwise and intercoastal shipping.

The order, which becomes effective September 10, gives ODT authority to direct any vessel coming under its provisions to be moved to such points as ODT may specify and to load, unload, or transport cargo to such points as ODT may require. It provides that vessels designed or converted for the transportation of liquid cargo in bulk may be operated only when authorized by ODT through special or general permits.

At the same time Mr. Eastman issued a suspension order (Suspension Order ODT No. 19-1), which eliminates from the general order's permit restrictions all craft carrying petroleum and petroleum products in a general northerly and easterly direction. Thus, as the ODT press release explained, the permit restrictions "will apply to vessels moving oil in the opposite direction of the desired flow such as westward from New York on the New York barge canals and southward from New York and Philadelphia on the inland waterways."

Vessel owners are made subject to the specific direction of ODT regardless of any existing contract, charter, or lease. The order specifies, however, that except as required by a direction or order of ODT, the provisions of the order shall not be construed to cancel or modify any charter or lease. Owners of vessels are required to keep records and make such reports as ODT may request. Provisions of the order will not apply to: (a) Nationals of a friendly nation with respect to vessels not documented under the laws of the United States; (b) transportation by vessel of

property by or to the United States government; (c) any vessel owned or controlled by the government except those owned or controlled by government corporations.

P.R.R.'s Shops and Railroad Battalion on War Duty

War production activities in Pennsylvania shops began about the middle of May, and have already reached large proportions. Work now going on includes machining ordnance parts; casting cylinders for 2,500 h. p. triple-expansion marine engines for the merchant fleet; machining rolling mill rolls to be used in the production of ammunition cases; and machining frames for the trimming presses used in war industries to shear off the "flashings," or rough projecting edges, from drop forgings.

Other jobs in prospect for this road's shops include machining tank parts; machining and finishing air compressor cylinders for submarines; and building "hot metal" cars for steel mills, used chiefly in carrying hot slag to dumps, but also employed in transporting molten metal from one place to another in steel plants.

The military railway battalion which is now being trained at a Pennsylvania division point includes in its functions all the details of operation, maintenance and supplies. The enlisted men, who serve under the staff of commissioned officers taken from the Pennsylvania's forces, are made up in part of railroad employees taken into the service and in part of suitable men from other sources.

The companies composing the battalion specialize in various departments of railroad work, including the movement of trains, the operation of stations and terminals, the construction and maintenance of road and yard tracks, and the servicing and repair of locomotives and cars. The battalion was organized in the spring of this year, and moved into a camp provided for it by the government on May 15.

Two other military railway battalions sponsored by the Pennsylvania are at present being held as reserves. Each has a complete personnel of commissioned officers, made up of officers and supervisory employees of the railroad still performing their regular duties, but enrolled in the Army Engineer Reserve Corps. The enlisted personnel will be selected by the War Department from railroad men already in service, when these battalions are called to active duty.

SPAIN ELECTRIFIES BUSY LINE.—Electrification is about completed of the double track railway between Madrid and Avila, Spain, a direct route between the capital and resorts in the Guadarrama Mountains, the Railway Gazette (London) reports. In addition to this 75 mi. main line, the project includes a 39 mi. single track branch from Villalba to Segovia. Power is supplied by overhead contact to 13 passenger and 24 freight locomotives, which, together with 30 rail cars ordered for local service, will free about 70 steam locomotives for use elsewhere.

GENERAL NEWS

Shows Post-1928 Coal-Rate Trends

I. C. C. Bureau issues study giving index of charges on anthracite

The net result of all post-1928 changes in railroad rates on anthracite coal was to leave such rates 0.7 per cent lower on March 18, 1942, than on January 1, 1929, according to a comprehensive study made public this week by the Interstate Commerce Commission's Bureau of Transport Economics and Statistics. The study, issued as information, "has not been considered or adopted by the Interstate Commerce Commission"; it was made by Sam G. Spal, assistant economist of the Bureau, assisted by Clarence E. Hinerman, freight rate clerk of the Bureau of Traffic.

The study (Statement No. 4255) is described in an explanatory note by M. O. Lorenz, director of the Bureau of Transport Economics and Statistics, as "part of a general study of the trend of railway freight rates in the United States since 1929." A similar study for bituminous coal rates was issued in 1941, as noted in the *Railway Age* of August 26, 1941, page 729. After the results of such studies are available for a sufficient number of commodities, Dr. Lorenz said, "they may be combined in a general index to show changes in the freight rate level as a whole." Meanwhile, as to the anthracite study, he had emphasized the fact that "no opinion is expressed herein as to whether the rates are too high or too low, the aim being merely to show what have been the changes in representative rates and what is the average of such rates each year when weighted by the volume of traffic."

Proceeding to that objective, the study developed its index numbers on the basis of January 1, 1929, rates as 100. The index was built up from a selected group of 77 key rates, representing all the rail charges for the transportation of anthracite coal to destinations in the United States. The relative importance of each rate was maintained by weighting it by the volume of 1936 traffic which moved to the market area for which it was chosen as typical. The index reflects "the combined changes in all rates (interstate as well as Pennsylvania intrastate) on domestic traffic only; rates on traffic destined to Canada have been excluded from this discussion."

The tabulation of the index numbers shows that the index numbers hovered between 100 and 99.6 from January 1, 1929, until January 4, 1932, when it reached

102.2, the peak for the 13¼-year period under review. By April 28, 1933, it was again under 100 (99.8); but it was up again to 101.5 on May 6, 1935. Then started a decline which culminated in a low for the period—92.5, where the index remained from January 1, 1937, until November 10, 1937. From that point the index rose to its March 18, 1942, figure of 99.3. The comment in the study indicates the various specific rate adjustments which affected the index.

Latimer Reappointment Confirmed

The Senate on August 17 confirmed President Roosevelt's reappointment of Murray W. Latimer as chairman of the Railroad Retirement Board for another five-year term beginning August 29.

Service Order Vacated

The Interstate Commerce Commission on August 13 issued Service Order No. 81-A, vacating as of that date Service Order No. 81 which had been issued July 29 to direct the Virginian to reroute cars loaded with coal consigned to South Amboy, N. J., in sufficient number to prevent undue accumulation of cars at Sewalls Point, Va.

Santa Fe Operates War Bond Dining Car

A war bond diner that is designed to aid in the sale of war bonds was placed in service by the Atchison, Topeka & Santa Fe on August 18. The roof of the car is blue and the sides are white with red stripes, while the message, Buy War Bonds, appears on a background of blue on the sheathing below the belt rail. This car is the first railroad passenger train car to be dedicated to the sale of war bonds. It is anticipated that other railroads and the Pullman Company will likewise assist the U. S. Treasury in the sale of bonds by operating similar "bond salesmen."

July Operating Revenues 35.5 Per Cent Above Last Year

Preliminary reports from 89 Class I railroads, representing 80.8 per cent of total operating revenues, made public August 18 by the Association of American Railroads, show that those roads, in July, had estimated operating revenues amounting to \$531,785,940, compared with \$392,338,623 in the same month of 1941, or an increase of 35.5 per cent. July freight revenues of the 89 roads amounted to \$426,421,501 compared with \$326,304,248 in July, 1941, or an increase of 30.7 per cent. Passenger revenues totaled \$73,655,817, compared with \$38,999,999 in July, 1941, or an increase of 88.9 per cent.

Labor Opposed to Revamping Bill

Brotherhoods deny that they favor re-enactment of the Chandler Act

Outright opposition on the part of organized railroad labor and a urgent request for modification of the bill by counsel for a Delaware & Hudson bondholders committee marked the final day of hearings before a Senate interstate commerce subcommittee on August 14 on H. R. 7121, the House-approved measure which would re-enact chapter 15 of the Bankruptcy Act providing for voluntary reorganizations of railroad companies. As noted in last week's issue, the Association of American Railroads and the American Short Line Railroad Association favor the bill.

At the beginning of the last session of the hearings letters were introduced from the Brotherhood of Railroad Trainmen and the Railway Labor Executives' Association saying that although the House judiciary committee report had said that the bill had received the endorsement of railroad labor, such was not the case, for both organizations were definitely opposed to it. No reasons were given for the Brotherhoods' opposition.

Ralph Montgomery Arkuish, New York reorganization attorney who is representing the committee for the Delaware & Hudson first and refunding mortgage four per cent bonds, called the bill "intellectually dishonest" and urged the subcommittee to completely rewrite it and bring out a "streamlined" reorganization bill which could be substituted for the present section 77 of the Bankruptcy Act.

The Delaware & Hudson expects to take advantage of the bill, if passed, so that it can obtain an extension of the maturity on some \$48,000,000 of its first and refunding mortgage bonds due next Spring.

Mr. Arkuish also told the subcommittee that the D. & H. should be reorganized but not through the present section 77 process. He criticized the House bill on the ground that it posed as an emergency measure while, in his opinion, the D. & H.'s troubles could not be called temporary because the railroad is making a good return on its investment due to war conditions and should be solvent now.

Another amendment which Mr. Arkuish wanted to see placed in the measure is one to insure that the bondholders may have access to a list of the bondholders and that the court will be required to look into the business record of the present management to ascertain whether or not the railroad has been managed properly.

Sees a Limit to Freight Capacity

General L. P. Ayres, Cleveland economist, warns this may mar war production

"Railroad traffic, and not scarce materials, or fabricating capacity, or industrial manpower, will be the limiting factor which will restrict the expansion of our production of munitions."

With these words an article in the current issue of the Business Bulletin of the Cleveland Trust Company begins a sober comparison of the steadily growing volume of freight traffic to the railroad equipment position, kept almost static by the WPB policy of limited material allocations to the carriers. Because this publication expresses the views of Brigadier General Leonard P. Ayres its predictions regularly attract wide attention in banking and business quarters. General Ayres, who recently retired as chief of the statistical branch of the U. S. Army, is vice-president of the trust company and an economist with a reputation for foresight.

"Our railroads are doing an outstandingly good job of war-time transportation," the article continues. "Probably they can just about succeed in carrying the peak volumes of autumn freight in September and October without any serious car shortages. Nevertheless it ought not to be assumed that they can indefinitely continue to transport volumes of freight that increase steadily and unceasingly from month to month. The limits of their capacity have been nearly reached, and when they are reached the volume of our industrial output will have to level off no matter what other forms of transportation may be called into service, and no matter how large the war appropriations may be.

"It might naturally be supposed that the limiting factor in the munitions part of our war program would be shortages of materials, and the importance of these factors is emphasized just now by the widespread reports that we cannot produce enough steel to meet our war needs. These assumed material shortages are more nearly the products of miscalculation and misallocation than they are of actual lack of sufficient materials. After all, we produce far more steel than Germany and Japan and Russia and England combined. Our materials shortages can mainly be cured by better allocations.

"The demands made on the railroads to carry freight are steadily and rapidly rising," the bulletin points out, "while their capacity to do the carrying cannot be much further increased. With carrying ability restricted, and demands steadily increasing, the limits of capacity will in time be reached, and that time is not far off."

Included in the article is a graph that presents the statistical background for this warning statement. Using the average figures for the year 1939 as a base, represented as 100 on a comparative scale, the diagram shows that the number of ton-miles of freight carried by the railroads each

month since then has grown steadily—making due allowance for seasonal variations and such exceptional conditions as strikes affecting coal shipments—until in the middle of this year it reached a point about 175 on the scale without showing any tendency to level off. In the same period the number of freight cars on the railroads has remained relatively uniform, increasing from the base value of 100 only to approximately 105, while the number of locomotives has decreased from the base point of 100 to less than 95.

Waives Inventory Order for 1942

The Interstate Commerce Commission in an order dated August 10 has waived, insofar as applicable to the year 1942, the requirements of Valuation Orders Nos. 4 and 22, relating to inventory of materials and supplies.

More Time on Public-Aids Briefs

The Transportation Board of Investigation and Research has postponed from August 25 until September 25 the deadline for the filing of briefs in the public-aids to transportation investigation which was the subject of recent hearings. Likewise the deadline for reply briefs has been moved up from September 15 until October 15.

Operating Net on Mexican Railways Drops

The operating net earnings of the National Railways of Mexico for May, 1942, amounted to 1,298,991 pesos compared with 2,036,668 pesos in May, 1941. Operating earnings totalled 15,608,513 pesos in May, 1942, and 14,566,344 pesos in May, 1941, while operating expenses amounted to 14,309,522 pesos in May, 1942, and 12,529,660 pesos in May, 1941.

I.C.C. Launches Investigation of Wool and Mohair Rates

The Interstate Commerce Commission has instituted upon its own motion an investigation of wool and mohair rates between all points in the United States. The proceeding is docketed as No. 28863, and interested parties have been advised that Commissioner Patterson will conduct a prehearing conference at the Morrison Hotel, Chicago, on September 11.

The investigation was hailed in an August 15 press release from the Department of Agriculture as one ordered as a result of the request made by Secretary Wickard under section 201 of the Agricultural Adjustment Act of 1938. Under that section, the secretary is authorized to make complaints to the I. C. C. with respect to rates on farm products. "The Department of Agriculture for some time has been conducting an intensive investigation of the equality of wool freight rates," Secretary Wickard said. "In addition, a number of producer organizations have expressed interest in this matter and have asked that I seek an investigation. . . . Preliminary investigations by the Transportation and Warehousing Branch of the Agricultural Marketing Administration have convinced me that freight rates on these products are out of line."

"Illegal" Trucks Get Certificates

I.C.C. Okays operations that had failed to comply with state law

Three Texas motor carriers, whose "grandfather" clause applications were denied when it was found that they were not in bona fide operation because of their failure to comply with Texas laws, have been granted certificates by the Interstate Commerce Commission on a showing of public convenience and necessity. The commission in a six-to-four decision thus reversed its Division 5 which had previously denied the applications, refusing to consider as proof of public convenience and necessity any evidence covering the applicants' past operations.

The carriers are D. A. Beard Truck Lines Company; W. B. Keele; and A. E. McDonald Motor Freight Lines. All now get certificates as common carriers of general commodities, with certain exceptions, from Houston, Tex., to various points in Texas and Louisiana; and of specified commodities in the reverse direction.

Commenting on Division 5's refusal to consider past operations of applicants, the commission said: "In the instant proceedings applicants cannot be considered new operators since their operations were conducted under color of 'grandfather' rights. The facts of past operations are closely interrelated with the testimony of the interested shipper or receiver witnesses dealing with the convenience of, and the need for, the proposed service. Where, as here, the past operations have been conducted under claims of 'grandfather' rights, openly and without subterfuge, we conclude that they should be given consideration in determining the issue of public convenience and necessity. The weight to be accorded such operations, however, must be determined upon the basis of their relation to the other evidence of public convenience and necessity and cannot be considered controlling of such matter."

With respect to the applicants' difficulties with the Railroad Commission of Texas, the I. C. C. notes that all now have Texas authority to handle interstate commerce, "contingent upon the granting by us of similar authority." It adds that "the fact that applicants may have violated a state law or even the act which we administer is not, as we have held in numerous cases, an absolute bar to the grant of a certificate."

Commissioner Lee, concurring, would have authorized the applicants to transport general commodities in both directions and to serve additional points, and Chairman Aitchison and Commissioners Porter and Splawn agreed with him. Commissioner Patterson, dissenting, thought it was "utterly inconsistent to find that applicants' past unlawful operations, which prohibited the granting of a certificate under their 'grandfather' applications, should be accepted to show a public necessity for their operation at this time." As he viewed the situation, "it is definitely shown that there

is no public need for applicants' services." Commissioner Rogers joined in Mr. Patterson's expression, while Commissioner Miller, in a brief dissenting statement, noted his agreement with Mr. Patterson, except that he was unable to accept the view that past operations may not properly be considered in a case involving public convenience and necessity. Commissioner Johnson, dissenting, concurred with Commissioner Patterson; but he also agreed with Mr. Lee's view that if the applicants were to be granted authority, it should include all commodities and additional points.

Employees of Noroeste of Mexico Get Wage Increase

The Noroeste de Mexico, which operates between Ciudad Juarez, Chihuahua and the city of Chihuahua, and the Union of Mexican Railway Workers have entered into a wage agreement under which employees receiving up to 2.50 pesos a day will be given an increase of 16 per cent and those receiving more than 2.50 pesos a day will be given increases ranging from 5 to 11 per cent.

Form National Association of Suggestion Systems

The National Association of Suggestion Systems was organized at Chicago on August 12, for the purpose of "improving employer-employee relations, stimulate constructive thinking and enhance a sympathetic understanding of mutual problems." Officers elected were: President E. S. Taylor, director of the employees' suggestion system of the Pullman Company; secretary, F. A. Denz of the United Air Lines; and treasurer, H. C. Marmaduke, manager of the employees' suggestion system of the Illinois Central.

Railroaders To Show Posies

The seventh annual flower show of the Pennsylvania Railroad Garden Club will be held September 18 and 19 in the main concourse of 30th Street Station, Philadelphia. One section, including 47 different classes of exhibits, is open to employees of all railroads, and also of the Railway Express Agency. This club, said to be the largest garden club in the country, developed from an exhibition of the Pennsylvania Horticultural Society which was staged in this station under the direction of Jay V. Hare, secretary and treasurer of the Reading.

Shippers and Railroads Discuss Oil Schedules at Chicago

Ways and means of perfecting the block system of oil transportation to the East, which was placed in effect on August 1, were discussed by shippers, car companies and railroads at a meeting called by the Office of Defense Transportation at Chicago on August 12. W. E. Callahan, manager of the Tank Car section of the Association of American Railroads, stated that although a better job is now being done, the program will ultimately involve the movement of 2,500 loaded and empty cars a day. He also asserted that the 110 to

115 schedules which the railroads have under consideration will be narrowed down to 50 or 60, with increased efficiency.

Routing committees for District 2, the originating territory, were appointed. The railroad committee consists of S. F. Lynch, superintendent of transportation of the Illinois Central, as chairman; C. H. Fischer, superintendent of transportation of the Chicago & Eastern Illinois; and J. J. Mahoney, general superintendent of transportation of the Atchison, Topeka & Santa Fe. The committee for the oil and car companies includes R. W. Fyfe of the Standard Oil Company of Indiana as chairman; B. C. Graves of the Union Tank Car Company, Chicago; H. R. Gillespie of the Deep Rock Oil Corporation, Chicago; L. A. Snyder of the Champlin Refining Company, Enid, Okla.; H. W. Roe of the Mid-Continent Petroleum Corporation, Tulsa; and S. P. Nunley, executive secretary.

Santa Fe is Fined \$10,000

The Atchison, Topeka & Santa Fe has pleaded nolo contendere to an information in 10 counts filed against it in federal court in Los Angeles, Calif., and has been fined \$1,000 on each count, or a total of \$10,000, according to information received by the Interstate Commerce Commission.

The information was filed under the pro-

visions of section 20(7) (b) of Part I of the Interstate Commerce Act, and charged the carrier with the wilful destruction of its records on the San Bernardino Division. The case was investigated by the commission's Bureau of Inquiry, which participated in the disposition of the matter in the federal district court.

Negro Track Man Derailed Panama Limited

The derailment of the Panama Limited, streamlined Illinois Central train, near Kerrville, Tenn., on July 13, was caused by James Edward Payne, a 32-year-old Illinois Central negro track laborer, who has admitted that he intended to rob the train. When taken into custody by agents of the Federal Bureau of Investigation several weeks ago, Payne admitted tampering with the track in an attempt to wreck the streamliner but told a wild story of being forced to commit a crime by a white man with a gun. He subsequently admitted however, that no other person was involved. He had been working for the Illinois Central for about three weeks prior to the derailment and had previously worked on an Illinois Central track gang in 1927 and 1928. He told the F. B. I. that no grievance against the Illinois Central was involved. He had no previous criminal record and has always worked as

* * *



From "Along the Line" (New Haven R. R.)

"Nothing's safe around here since they gave him one of those ritzy new cabooses"

a farmer or laborer in the vicinity of Kerrville.

In committing the crime, Payne secured a pinch bar which had been left near a spur track switch and had been used as a makeshift switch lever. He hid the pinch bar on the right of way near the track at night several days before he attempted to wreck the streamliner. The same night, he broke into a cotton gin behind the Millington, Tenn., post office and stole a big wrench. These were the only tools used.

In the derailment, which was reported on pages 116 and 117 of the *Railway Age* of July 18, only two cars were derailed and four persons injured.

Press, Radio and Service Men Ride Caboose on I.C.

The Illinois Central, on August 14, conducted an inspection tour of its Chicago facilities as a public relations enterprise to familiarize representatives of the armed forces, the press and the radio with its transportation performances. Included in the party of 22, which rode in two cabooses, were a captain and an ensign of the Coast Guard, lieutenants of the Intelligence and Quartermaster departments of the Sixth Corps Area and a captain of the Marines. Points inspected included the chief dispatcher's office at the Randolph Street station, the I. C. I. platforms at the South Water Street terminal, the stockyards facilities where meat trains are loaded and dispatched, and the Markham classification yards.

New Wage Minimum Approved

The findings of the industry committee which earlier this year recommended establishment of a minimum wage rate of 40 cents per hour to apply on all railroads have been approved by the Administrator of the Wage and Hour Division of the U. S. Department of Labor. The new "floor" will become effective August 31. As reported in *Railway Age* of May 9, page 915, this committee is the second appointed for the railway industry under the Fair Labor Standards Act. No opposition was offered by the railroads to the committee proposal. Estimates vary as to the number of employees affected, but labor spokesmen suggest it will be around 20,000. Most of these are unskilled laborers on lines that were not parties to the general wage revisions last December.

Hearings on Short Lines Dispute Continue

Hearings on the dispute involving wages and vacations for non-operating employees of 27 short line railroads, which were begun at Chicago on August 10 before a three-man emergency board, continued this week. In this dispute the non-operating unions are demanding the same rates of pay and vacations for short line employees as were granted non-operating employees of Class I railroads in the December agreement. The short lines involved had granted wage increases which in some instances were less than the 10 cents per hour granted Class I employees and consequently had not raised the wages of non-operating employees to the minimum of 46 cents set for

Class I employees. On some short lines the Class I railroad wages and minimums had been placed in effect and in these cases only the retroactive date of the increase is in dispute. Vacations are not in dispute on all short lines.

Freight Car Loading

Loading of revenue freight for the week ended August 15 totaled 868,845 cars, the Association of American Railroads announced on August 20. This was an increase of 19,093 cars, or 2.2 per cent, above the preceding week, a decrease of 21,492 cars, or 2.4 per cent, below the corresponding week in 1941 but an increase of 125,795 cars, or 16.9 per cent, above the same week in 1940.

As reported in last week's issue, loadings of revenue freight for the week ended August 8 totaled 849,752 cars, and the summary for that week, compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

District	1942	1941	1940
Eastern	156,158	177,718	145,753
Allegheny	186,039	193,543	155,298
Pocahontas	55,245	58,683	49,776
Southern	117,790	120,099	97,366
Northwestern	141,869	145,709	129,665
Central Western	123,552	127,634	105,707
Southwestern	69,099	55,119	43,508
Total Western Roads	334,520	328,462	278,880
Total All Roads	849,752	878,505	727,073
Commodities			
Grain and grain products	42,126	45,888	41,386
Livestock	11,998	9,986	10,732
Coal	163,440	166,434	125,857
Coke	13,876	13,030	10,283
Forest products	53,083	49,119	36,174
Ore	89,052	76,700	70,209
Merchandise I.C.I.	89,051	156,709	149,667
Miscellaneous	387,126	360,639	282,765
August 8	849,752	878,505	727,073
August 1	863,528	882,022	717,927
July 25	855,522	897,564	718,038
July 18	857,067	899,370	730,460
July 11	855,124	876,142	736,783

Cumulative Total,
32 Weeks ... 26,094,853 25,024,694 21,181,985

In Canada.—Carloadings for the week ended August 8 totaled 63,680 as compared with 66,246 in the previous week and 60,535 in the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
Aug. 8, 1942	63,680	35,116
Aug. 1, 1942	66,246	35,443
July 25, 1942	66,540	35,872
Aug. 9, 1941	60,535	28,354
Cumulative Totals for Canada:		
Aug. 8, 1942	2,027,811	1,054,940
Aug. 9, 1941	1,863,523	934,524
Aug. 10, 1940	1,626,436	775,857

Signal Union Holds Convention

At the opening session on August 17 of the national convention of the Brotherhood of Railway Signalmen, meeting at the Pennsylvania Hotel, New York, Colonel A. Robert Ginsburgh, public relations officer of the War Department, service of supply, praised the performance of the railroads in handling during the first six months of this year as many troops in organized movements alone as were moved in the first 15 months of World War I. The speaker also paid tribute to railroad efficiency in handling the large volume of

military freight, both at camps and construction projects about the country and at ports for transfer to ocean ships.

The "keynote" address of A. E. Lyons, grand president of the union, indicated that the convention would be asked to adopt resolutions opposing "freezing" wages, and suggested that consideration would be given to demanding "readjustments" in current wage scales and working conditions, particularly to secure greater regularity of employment.

Requires Joint Use of Louisville Yards for Livestock Traffic

Service Order No. 82 was issued by the Interstate Commerce Commission on August 17 to require railroads serving Louisville, Ky., "to make such joint or common use of the terminals within the Louisville switching district as will result in the best and most expeditious movement of cars loaded with livestock between their yards and the Bourbon Stock Yards, and in the reverse direction, with the least delay to cars and congestion to traffic." The order became effective August 18.

The order sets forth that "due to the present method of operation of terminals in Louisville, Ky., movements of cars loaded with livestock . . . are seriously delayed, resulting in unnecessary detention to railroad equipment and congestion of traffic." The order provides that the joint arrangements shall be upon such terms as the carriers may agree upon; "or in the event of their disagreement, as this commission may, after subsequent hearing, find to be just and reasonable."

CIO Union Inserts Itself in P.R.R. Track Workers' Dispute

Labor organizers associated with the Utility Workers Organizing Committee, CIO affiliate, in protests to the National Mediation Board in Washington, have accused the Pennsylvania of resorting to "lock out" tactics in a dispute involving unskilled laborers employed in maintenance of way work in New Jersey.

The men concerned are residents of New York and nearby points, and the railroad transports them between its Jersey City terminal and points on its main line where work is in progress. The controversy began late in July, when dissatisfaction with the accommodations provided to haul them to and from the job developed into a strike, as reported in *Railway Age* of August 8, page 241.

To meet the objections expressed at that time, the railroad undertook to renovate the work train cars then in use, and most of the men returned to work. Coaches were substituted for the regular cars until August 10, when the work train cars were returned to service, altered by the addition of windows, sanitary facilities and drinking water supplies. The men again refused to ride in these cars, and their spokesman submitted new demands, claiming that they should be paid for the time spent traveling to and from work and asking an increase in the hourly wage rate.

On August 11, pay day, most of these men came to work, but staged a sit-down strike on the job. When they again re-

ported at the Jersey City terminal on August 17 they were informed, according to the complaint filed in Washington, that they had been replaced, and on that ground the CIO union leaders accused the railroad of imposing a "lock out." In presenting its side of the case to the National Mediation Board the railroad denied that any lock out existed, and pointed out that the men were working under wage rates and working conditions established by agreement with the Brotherhood of Maintenance of Way Employees, the recognized labor union representing employees in that department, and that no grievances had been presented through the regular channels by that organization.

Between 450 and 500 men are involved in the series of incidents. Somewhat more than one-third of them were employed in yards in the New Jersey terminal area around New York harbor, while the others were distributed at main line points between Elizabeth and New Brunswick, N. J.

Embargo on Cash Grain to Chicago Lifted

Embargoes on the rail movement of all free or cash grain to the Chicago market were lifted temporarily at midnight on August 14 by the Car Service division of the Association of American Railroads. The same release took effect on August 16, on the same grain to the Milwaukee market, except that permits will continue to be needed for shipments of flaxseed.

The lifting of the requirements for permits to ship cash grain to these markets, which was made at the request of grain storage committees, does not affect the rail movement of grain intended for storage. The removal of the permit requirement on cash grain was due to a decrease in the movement of such grain and to the fact that the volume was substantially below the levels of a year ago.

The embargo, issued on July 15, upon authorization of the Interstate Commerce Commission in its service order No. 80, originally covered only storage grain to all terminals but was subsequently extended to cover cash wheat at Kansas City, Mo., and to all grain at Chicago.

P. R. R. Adds to Philadelphia Freight Facilities

The Pennsylvania has just completed a \$3,000,000 program of improvements and additions to its terminal facilities in the southern section of Philadelphia. Work on the project was resumed early this year to accommodate wartime expansion, after suspension in 1931.

These improvements included three major steps—construction of a new receiving and classification yard southeast of the Municipal Stadium and extending from Broad Street to Delaware Avenue; erection of a new modern shed on Pier 82, leased from the city; and rearrangement of yard tracks serving the Girard Point grain elevator and the petroleum industries in the Point Breeze district.

Facilities installed on the pier include flood lighting and loading masts, and tracks along each side of the shed. In the Point

Breeze section the busy Penrose avenue grade crossing was eliminated, to facilitate switching movements. Freight for piers and industries along the Delaware river in South Philadelphia will be handled through the new receiving yard, which has a capacity of 3,000 cars.

Representation of Employees

The National Mediation Board has certified that the Brotherhood of Sleeping Car Porters has been duly authorized to represent train porters employed by the Seaboard Air Line. In another case it has found that piece work inspectors are included among Western Fruit Express carmen represented by the Brotherhood of Railway Carmen of America, operating through the Railway Employees Department, American Federation of Labor.

Two affiliates of the Congress of Industrial Organizations have been authorized to represent railroad employees as a result of recent elections and checks of representation authorizations certified by the National Mediation Board. The cases involved clerical, office, station and storehouse employees of the South Buffalo, who chose the C. I. O.'s United Steelworkers of America; and the sub-station department employees of the Hudson & Manhattan who chose the Utility Workers Organizing Committee, C. I. O.

In other recent elections, the Order of Railroad Telegraphers won the right to represent linemen (telegraph, telephone and teletype maintainers) of the Denver & Rio Grand Western; while the International Union of Operating Engineers was certified as the representative of hoisting engineers in marine service of the Central of New Jersey.

Equipment Installed

Class I railroads put 51,606 new freight cars in service in the first seven months of 1942, according to the Association of American Railroads. Included were 32,934 box, 15,891 coal, 1,448 flat, 397 refrigerator, 63 stock, and 873 miscellaneous freight cars.

New freight cars on order on August 1 totaled 36,453 compared with 89,416 on the same day last year. Class I roads had on order on August 1, this year, 13,532 box, 18,595 coal, 2,348 flat, 1,011 refrigerator, 237 stock, and 730 miscellaneous freight cars.

Railroads in the first seven months of 1942 installed 432 locomotives, of which 175 were steam and 257 were electric and Diesel-electric. In the same period last year they put 323 new locomotives in service, of which 75 were steam and 248 were electric and Diesel-electric.

New locomotives on order on August 1 totaled 881, which included 334 steam and

* * *



C. N. R. photo.

SPACE-TIME WAR!



Today's military experts speak of "space-time war" as something new—but the railroads have been fighting, and winning, their war against space and time ever since the days of the Stourbridge Lion.

In their latest and most successful campaign, a campaign which started in 1925 with Lima's introduction of Modern Super Power Steam Locomotives, the railroads have won a succession of outstanding victories over time and space, as evidenced by a series of new records in gross-ton-miles per train-hour.

And now, responding still further to the calls of war, the railroads are surging ahead to new levels of national service in their determination to carry more freight, more miles, in less time than ever before.

LIMA LOCOMOTIVE WORKS



INCORPORATED, LIMA, OHIO

547 electric and Diesel-electric. On August 1, last year, they had 603 new locomotives on order, including 300 steam and 303 new electric and Diesel-electric.

Women Ticket Sellers Added by New York Central

Now undergoing training, 14 young women soon will be added to the New York Central's staff of ticket sellers in Grand Central Terminal, New York. This departure from the former practice of hiring only men for this work, observed since the end of World War I, has been taken both to handle the growing volume of business and also to replace men called into service.

After a period of training, the women will fill in on the local ticket windows on the lower level at Grand Central. Then, as they gain experience, they will move on to the main ticket windows on the upper level, and also, possibly, to a new series of ticket windows which will be installed soon on the main concourse between the information booth and the Vanderbilt Avenue stairway.

Construction

GREAT NORTHERN.—This road is constructing a line change about eight miles long between Belton, Mont., and Citadel, which will cost approximately \$400,000. The line change will eliminate 17 curves and more than 630 deg. of curvature, reducing the maximum curvature from 10 deg. to 3 deg. The distance, as compared to the old alignment, will be shortened about 0.4 mi. A contract for the grading, amounting to about \$130,000, has been awarded A. Guthrie & Co., St. Paul, Minn. The track laying and ballasting will be done by railroad forces.

LONG ISLAND.—In connection with the Rockaway Beach elimination project, this company has awarded a contract to the Del Balso Construction Corporation, New York, for the construction of permanent highway facilities from Hammel to Far Rockaway, N. Y., at an estimated cost of \$955,000.

LOUISVILLE & NASHVILLE.—This road has recently authorized several construction projects, each of which will cost more than \$20,000, as follows: the construction of additional yard tracks at Sibert, Ala., and Gentilly, La., the construction of an industry track at Strawberry, Ky., and construction of passenger station facilities at Mobile, Ala.

PENNSYLVANIA.—This railroad has awarded a contract for track changes and grade reduction from Stubblefield to Marty, Ill., to R. McCalman, Inc., Danville, Ill.

WAR DEPARTMENT.—Recent contracts awarded for railway construction are as follows: The U. S. Engineer Office, Detroit, Mich., has awarded a contract in amount less than \$500,000 to Hamer Brothers, Inc., Detroit, for the construction and completion of a railroad spur

track in Michigan; The U. S. Engineer Office at Columbus, Ohio, has awarded a contract in amount less than \$100,000 to the Industrial Track Service Company, Youngstown, Ohio, for laying a railroad track in Ohio; the U. S. Engineer Office at Los Angeles, Cal., has awarded a contract in amount less than \$100,000 to Clifford C. Bong, Temple City, Cal., for the construction of railroad facilities in California; and the U. S. Engineer Office at Boston, Mass., has awarded two contracts, both in amount less than \$50,000, one to the Maine Central for the construction of a spur track in Maine, and the other to the Boston & Maine for the construction of a spur track in New Hampshire. Other contracts recently awarded, all of them in amount less than \$50,000, are as follows: The U. S. Engineer Office, New Orleans, La., to A. Farnell Blair, Decatur, Ga., for the construction of a switching yard in Louisiana; U. S. Engineer Office, Mobile, Ala., to F. S. Neely, Kosciusko, Miss., for grading and drainage for a spur track in Mississippi; and U. S. Engineer Office, Jacksonville, Fla., to the Sutton Construction Company, Lakeland, Fla., for the construction of a spur track in Florida.

READING.—This company has awarded a contract for repairs to its thawing shed at Port Reading, N. J., at an estimated cost of \$40,500, to the Calabro Construction Company, Inc., of Elizabeth, N. J.

SOUTHERN PACIFIC.—The U. S. Engineer Office, Sacramento, Cal., has awarded a contract amounting to approximately \$50,000 to A. D. Schader, San Francisco, Cal., for the removal of an abandoned railroad track located in Shasta county, Cal.

Equipment and Supplies

FREIGHT CARS

THE CARNEGIE-ILLINOIS STEEL CORPORATION is inquiring for 10 flat cars of 50 tons' capacity.

THE REPUBLIC STEEL CORPORATION is inquiring for from 20 to 125 hopper cars of 70 tons' capacity.

SIGNALING

THE SEABOARD has awarded a contract to the Union Switch & Signal Co. covering the materials required for the installation of centralized traffic control between Youngville, N. C., and Raleigh, approximately 20 miles. Included also are materials for the remote control of switches and signals by code at Henderson and Franklinton, all of which will be handled from one control machine located at Raleigh. The order involves M-22A dual-control electric switch movements, color-light signals, electric switch locks, relays, copper oxide rectifiers, and housings, with all instrument cases factory wired. Two complete sets of Union coded carrier con-

trol will be installed for the control and indication of the C. T. C. signaling now in service north of Youngville. This makes it possible to use the existing code line circuit for the C. T. C. now to be installed south of Youngville. The field installation work will be carried out by the regular signal construction forces of the Seaboard.

Supply Trade

The Army-Navy E award for high achievement in the production of war equipment has been conferred on the **H. K. Porter Company** of Pittsburgh, Pa.

The Army-Navy production award for high achievement in the production of war equipment has been conferred upon the **Philco Corporation**, Philadelphia, Pa.

The **Virginia Bridge Company**, United States Steel subsidiary at Roanoke, Va., which has been playing an important part in the fabrication and erection of steel structures essential to the war effort, has been awarded the new Army-Navy E for production achievement.

Five additional assistant superintendents have been appointed for the **American Locomotive Company** plant at Schenectady, N. Y. The new appointees are **J. W. Biggerstaff**; **E. W. Bradford**; **J. P. Fleming**; **J. A. Gaulty** and **J. D. Reynolds**. All of the new assistant superintendents are veterans of the company.

Joseph Michaels, who has been elected chairman of the board of the **Hyman-Michaels Company**, Chicago, as reported in the *Railway Age* of August 15, was born at Cincinnati, Ohio, on July 29, 1872, and entered the employ of the Block-Pol-



Joseph Michaels

lack Iron Company, Chicago, in 1890. In 1911 he became one of the organizers of the Hyman-Michaels Company and served as vice-president until 1923, when he was elected president, the position he was holding at the time of his recent election.

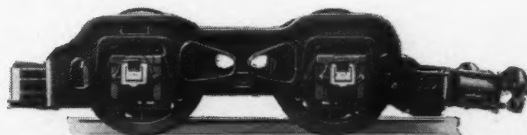
Sparrow E. Purdy, who succeeds Mr. Michaels as president, was born at Yuma, Ariz., in 1886 and entered the employ of

THE PRESENT EMERGENCY DEMANDS HEAVIER LOADS and HIGHER SPEEDS from EXISTING LOCOMOTIVES

THE
**FRANKLIN
SYSTEM**
OF
Steam
Distribution

This is a critical year. Power to move more tonnage is sorely needed.

The Franklin System of Steam Distribution increases the capacity of the locomotive at least a third as well as its availability. Add the Locomotive Booster* for the equivalent of another driving axle to accelerate and start heavier loads.



*Trade Mark Registered United States Patent Office

THE LOCOMOTIVE BOOSTER



FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK
CHICAGO

In Canada: FRANKLIN RAILWAY SUPPLY COMPANY, LIMITED, MONTREAL

the Hyman-Michaels Company at the time of its organization. He held the positions



Sparrow E. Purdy

of auditor, secretary and vice-president and in 1927 was elected vice-president and general manager, the position he was holding at the time of his recent election.

Everett B. Michaels, who has been elected executive vice-president, was born in Chicago in 1902 and entered the employ of the Hyman-Michaels Company in 1923 after graduating from the University of Michigan. After holding various positions,



Everett B. Michaels

he was elected vice-president in 1927, which position he has held until his recent promotion.

The **Carnegie-Illinois Steel Corporation**, a subsidiary of the United States Steel Corporation, has given a 60-day purchase option on its Canonsburg, Pa., works to the Defense Plant Corporation.

E. P. Cramer has been appointed advertising manager of the Edison Storage Battery Division of **Thomas A. Edison, Inc.**, West Orange, N. J. Mr. Cramer has been with the advertising department of the division for 10 years as field editor of "Storage Battery Power," a house publication. Before joining Thomas A. Edison, Inc., he was on the staff of James F. Newcomb & Co., New York advertising

agency, and was also a free lance writer on industrial subjects.

Fred C. Davern has been named assistant manager of the railroad sales department of the **Standard Oil Company of New Jersey**. Mr. Davern has been railroad sales engineer with Esso since March 1, 1933, covering all eastern railroads. His career in the railroad field began in the mechanical shops and drafting room of the Erie at Meadville, Pa., in 1908.

The **Gisholt Machine Company**, Madison, Wis., has announced several new appointments to their field sales and service personnel in the United States and Canada. Direct sales representatives and agents have been appointed as follows: Ray Hering, to the Cleveland, Ohio, office; Earl K. Baxter, to the Detroit, Mich., office; B. C. Greene, and Steel & Machine Tool Sales, Inc., to the Houston, Tex., territory; the Dawson Machinery Company to the Seattle, Wash., territory; and the Foulis Engineering Sales Company to the Nova Scotia and New Brunswick, Canada and Newfoundland territories, with offices at Halifax, N. S. Direct service representatives have been appointed as follows: John T. Murray, to the Dayton, Ohio, office; Grover Pruett and Philip E. Denu, to the Newark, N. J., office, and Alfred Math Kuehn, to the Lockport, N. Y., Pittsburgh, Pa., and Toronto, Canada, territories, with headquarters in Lockport. Agents' sales representatives have been appointed as follows: D. O. Vincent, in the Atlanta, Ga., territory; D. M. Ward, to cover southern Georgia and Florida, with headquarters at Jacksonville, Fla.; Gordon N. Russell, Ltd., to the British Columbia, Canada territory, with headquarters in Vancouver, Canada; and C. B. Spaulding, to the Windsor, Ontario, Canada territory, with headquarters at Windsor.

OBITUARY

Thomas E. Knox, president and chairman of the board of the Thomas F. Carey Company, Inc., of New York, died August 7. He was sixty-three years of age.

Frederick L. Stone, vice-president of the **Universal Atlas Cement Company**, Chicago, died at Rochester, Minn., on August 17, following an operation.

Thomas F. Kilcoyne, traveling engineer for the American Arch Company, Inc., died August 10, at Cincinnati, Ohio. He had been associated with the American Arch Company for 30 years. Mr. Kilcoyne was formerly a boilermaker on the Pennsylvania at Altoona, Pa., and a boiler inspector for the Chesapeake & Ohio at Huntington, W. Va.

Earl Hammond Fisher, assistant to the president of the Wine Railway Appliance Company and assistant to the vice-president of the Unitcast Corporation, Toledo, Ohio, died August 9. He was 47 years of age. Mr. Fisher began his career with the Norfolk & Western at Roanoke, Va., serving as chief clerk to master boilermaker from March, 1914, to July, 1915,

and as a draftsman, motive power, from July, 1915, to July, 1916. He subsequently was engaged as a draftsman for the Colorado & Southern at Denver, Colo., from July to September, 1916; as a draftsman for the Chicago, Rock Island & Pacific at Silvis, Ill., from September, 1916, to July, 1917; as a locomotive designer for the Union Pacific at Omaha, Nebr., from July, 1917, to December, 1918; and as a locomotive designer for the Norfolk & Western from December, 1918, to March, 1921. He was associated with the Hanna Locomotive Stoker Company, Cincinnati, Ohio, as mechanical engineer from March, 1921, to February, 1923, and with the T. H. Symington Company, East Rochester, N. Y., as special designer from February to April, 1923. He joined the Wine Railway Appliance Company in April, 1923, as mechanical engineer and subsequently was appointed sales engineer in January, 1926, and assistant to the president, Wine Railway Appliance Company, and assistant to the vice-president, Unitcast Corporation, in July, 1939.

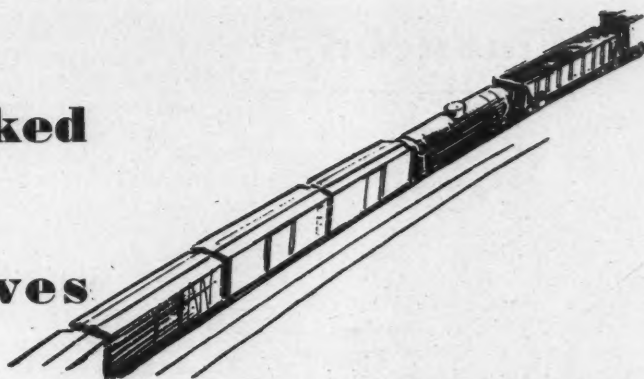
John P. Sykes, who, prior to his retirement in 1938, had advanced from apprentice to senior vice-president of the Baldwin Locomotive Works during 59 years of service with that company, died August 16. He was 82 years of age. Mr. Sykes joined the Baldwin Locomotive Works as an apprentice in 1879. His advancement was steady and he served in the capacities of contractor, assistant foreman and general foreman until 1905, when he was appointed general superintendent of the (then new) Eddystone, Pa., shops. In



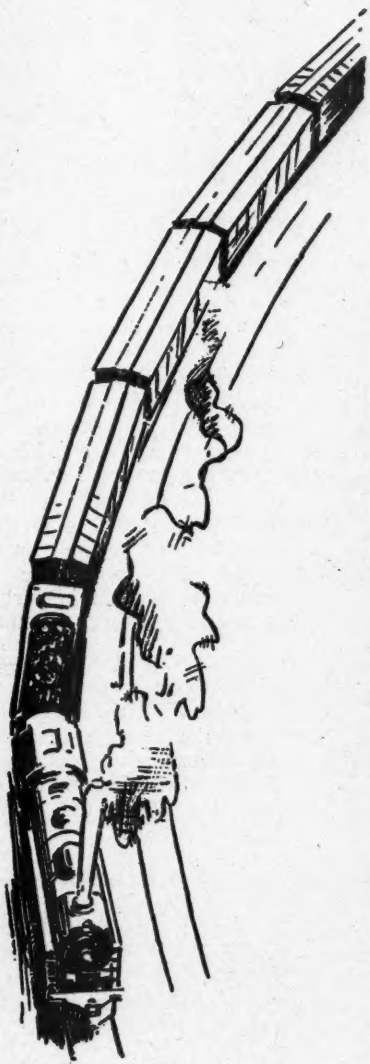
John P. Sykes

1907 he left the parent company to become general superintendent of its subsidiary, the Standard Steel Works Company at Burnham, Pa., returning to Baldwin in 1910 as assistant general superintendent. In July, 1911, he was made general superintendent, which position he held until his selection as vice-president in charge of manufacture in September, 1917. In May, 1922, he was appointed senior vice-president in charge of plants and manufacture and in 1931 was elected a director. Mr. Sykes resigned his positions and retired from active participation in the affairs of the Baldwin Locomotive Works in March, 1938.

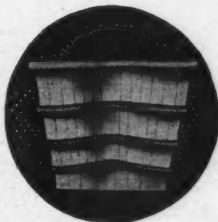
THE HARDER The Locomotive Is Worked THE MORE The Arch Brick Saves



When locomotive runs were short and train speeds slow, the Security Arch showed substantial fuel savings . . . With modern operation, involving long runs at high speeds, the Security Arch shows a greater economy . . . Today the Security Arch costs less per 1,000 ton miles and is a more important fuel saving factor than it was when the service was less severe.



**HARBISON-WALKER
REFRACTORIES CO.**
Refractory Specialists



**AMERICAN ARCH CO.
INCORPORATED**
60 EAST 42nd STREET, NEW YORK, N. Y.
*Locomotive Combustion
Specialists*

Financial

CHICAGO, BURLINGTON & QUINCY.—*Abandonments.*—Authority to abandon five of its Nebraska branch lines, totaling 52 miles, is sought by this road in applications filed with the Interstate Commerce Commission. The lines are: Superior to Nelson, 13 mi.; Hebron to Chester, 11.4 mi.; Salem to Shubert, 10.74 mi.; Alma to Huntley, 9.77 mi.; and Benedict to Stromsburg, 7.1 mi. Each of the five applications has this to say: "The commission knows judicially that the nation is faced with an urgent demand for scrap and usable railroad material. Thus, the abandonment and dismantlement of this line will not only release steel rail, and metal scrap now urgently needed in the war effort, but will also remove a substantial burden upon applicant and upon interstate commerce."

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon a line extending from Otis, Wis., to Doering, 16.8 miles.

CHICAGO & NORTH WESTERN.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon a branch line extending from Belle Plaine, Iowa, to What Cheer, 37.7 miles.

DELAWARE, LACKAWANNA & WESTERN.—*Tax Suit by Leased Line.*—The Lackawanna Railroad of New Jersey, under lease to the D. L. & W., has filed suit through one of its stockholders in the United States District Court at Newark, N. J., seeking to compel the D. L. & W. to pay \$810,165 in accumulated federal taxes. The United States Circuit Court of Appeals recently held the D. L. & W. not responsible for taxes accumulated against its leased roads amounting to \$5,575,000.

FLORIDA EAST COAST.—*Modification of Reorganization Plan.*—The Interstate Commerce Commission has issued a supplemental report in this company's reorganization case making certain minor modifications in the final plan which was issued April 6, details of which were given in the *Railway Age* of April 18, page 795. Under the modified plan, the effective date of January 1, 1942, is changed to a date not earlier than January 1, 1943 and not later than January 1, 1944.

The Five Per Cent committee had requested that the approved plan be modified by increasing the permissible capitalization of the reorganized company from approximately \$37,000,000 to about \$58,000,000 and by increasing the principal amount of new general mortgage income bonds to be issued in the reorganization from \$4,500,000 to \$18,000,000. The full commission refused this request, thus upholding the capitalization approved by Division 4 in the earlier report.

Commissioner Miller dissented in part, saying that he would have granted the petition of the Five Per Cent committee with respect to the increased capitalization.

HUTCHINSON & NORTHERN.—*Acquisition and Operation.*—This company has asked the Interstate Commerce Commission for authority to acquire and operate one mile of track belonging to the Arkansas Valley near Hutchinson, Kans. The Arkansas Valley has been authorized to abandon the line which has, for some years, been operated by the Hutchinson & Northern.

ILLINOIS CENTRAL.—*Abandonment by the Yazoo & Mississippi Valley.*—The Yazoo & Mississippi Valley has asked the Interstate Commerce Commission for authority to abandon a line extending from Ethel, La., to Clinton, 8.3 miles.

ILLINOIS CENTRAL.—*Abandonment by the Dubuque & Sioux City.*—The Dubuque & Sioux City and the Illinois Central, respectively, have been granted authority by Division 4 of the Interstate Commerce Commission to abandon a line and the operation thereof extending in a southerly direction from Anthon, Iowa, to the end of the line at Onawa, 29.4 miles.

LOUISVILLE & NASHVILLE.—*Abandonment.*—With compliance rendered impossible because the federal government has requisitioned the metal and begun to dismantle, this road has asked the Interstate Commerce Commission to modify the recent decision wherein Division 4 required that the 5.8-mile line between Fincastle, Ky., and Maloney be continued in operation for a further six months trial period. As noted in the *Railway Age* of August 1, page 195, Division 4, acting upon the L. & N. application for authority to abandon its 53-mile line between North Winchester, Ky., and Maloney, authorized abandonment of the 47.2-mile North Winchester-Fincastle segment, but required the remainder to be kept in operation without prejudice to renewal of the abandonment application after six months from July 28. The government, however, requisitioned the entire line, and began to dismantle it on August 7.

NEW YORK CENTRAL.—*Acquisition.*—This company has asked the Interstate Commerce Commission for authority to acquire a spur line extending in a northerly direction from the terminus of its Carthage branch 1.2 miles north of Newton Falls, N. Y., to a point near Clifton Mines, nine miles.

NEW YORK CENTRAL.—*Abandonment by the Michigan Central.*—The Michigan Central and the New York Central, respectively, have been authorized by Division 4 of the Interstate Commerce Commission to abandon a portion of the so-called Caro branch and the operation thereof extending from Bach, Mich., to the end of the line at Owendale, 5.7 miles.

NEW YORK, NEW HAVEN & HARTFORD.—*Equipment Trust Certificates.*—This road has applied to the Interstate Commerce Commission for authority to assume liability for \$1,390,000 of equipment trust certificates to finance in part the purchase at an estimated cost of \$1,737,500 of 10 new 2,000 h.p. Diesel-electric "A" unit passenger and freight locomotives, which will ordinarily be operated in pairs. The

rate at which the certificates would be issued is to be determined from competitive bids, while they would mature in ten equal annual installments on October 1 of year year from 1943 to 1952.

NORFOLK SOUTHERN.—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon that portion of its so-called Currituck branch extending southwardly from a point near Back Bay, Va., to the end of the branch at Munden, 5.1 miles.

PENNSYLVANIA.—*Abandonment by the Pennsylvania, Ohio & Detroit.*—The Pennsylvania, Ohio & Detroit and the Pennsylvania, respectively, have been granted authority to abandon 1.5 miles of railroad and the operation thereof in Strasburg, Ohio.

PENNSYLVANIA.—*Trackage Rights.*—The Pennsylvania, Ohio & Detroit, a subsidiary of the Pennsylvania, has been granted authority by Division 4 of the Interstate Commerce Commission to acquire trackage rights over lines of the Pittsburgh, Cincinnati, Chicago & St. Louis between Trinway, Ohio, and Newcomerstown, 29 miles; and over the line of the Cleveland & Pittsburgh between Dover, Ohio, and Hudson, 71 miles.

PITTSBURGH, LISBON & WESTERN.—*Abandonment.*—This company has been granted authority by the Interstate Commerce Commission to abandon a line of railroad extending from Signal, Ohio, to Lisbon, 7.4 miles. At the same time the commission deferred for further active consideration the company's application for authority to purchase and operate a single-track line of railroad extending from Signal, Ohio, to Columbianna, 6.5 miles, now owned and operated by the Youngstown & Suburban; and to issue an unsecured negotiable promissory note in the face amount of \$400,000 in part payment for the purchase price of the line.

ST. LOUIS & HANNIBAL.—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon a branch line of railroad extending southwesterly from a connection with its main line at Ralls Junction, Mo., to the end of the branch at Perry, 17.8 miles.

SEABOARD AIR LINE.—*Abandonment.*—This company has been granted authority by Division 4 of the Interstate Commerce Commission to abandon a branch line extending from a connection with its main line at Chisholm, S. C., to the end of the track at Lancett, 3.5 miles.

SEABOARD AIR LINE.—*Equipment Trust Certificates and RFC Financing.*—Division 4 of the Interstate Commerce Commission has approved a plan whereby this company will issue \$2,280,000 of 2¾ per cent equipment trust certificates which will be either sold to the Reconstruction Finance Corporation or guaranteed by it. The proceeds of the issue, which will mature in 20 semi-annual installments beginning January 1, 1943, will be used to purchase new equip-



Make the MOST of FUEL and STEAM ... with *Elesco Superheaters*

The fundamentally correct engineering principles in the designs of Elesco superheaters make it possible to produce more steam per unit of fuel and more work per unit of steam.

Maintain these advantages by correct maintenance of Elesco equipment.

TO KEEP 'EM ROLLING . . . KEEP 'EM MAINTAINED



A-1519

SUPERHEATERS • FEEDWATER HEATERS
AMERICAN THROTTLES • STEAM DRYERS
EXHAUST STEAM INJECTORS • PYROMETERS

THE
SUPERHEATER
C O M P A N Y

Representative of
AMERICAN THROTTLE COMPANY, INC.
60 East 42nd Street, NEW YORK
122 S. Michigan Blvd., CHICAGO

Montreal, Canada
THE SUPERHEATER COMPANY, LTD.

ment costing a total of \$3,069,760 and consisting of six 5,400 h. p. Diesel-electric freight locomotives and two 1,000 h. p. Diesel-electric switching locomotives.

SEABOARD AIR LINE.—Calls for Tenders of Certificates.—Receivers of this railroad, in accordance with the terms of an order by the United States District Court for the Eastern district of Virginia, have called for tenders, on or prior to September 2, for the purchase by the railroad of receivers' certificates issued pursuant to order 160A of the court and maturing February 1, 1945, and all or part of the obligation of the railroad to the Pullman-Standard Car Manufacturing Company. The amount of certificates to be purchased under the plan is subject to the court's order.

In June of this year, the railroad was authorized to expend \$2,000,000 to retire receivers' certificates and reduce obligations of the Pullman-Standard Car Manufacturing Company and the Union Switch & Signal Co. (*Railway Age*, June 27). In response to this call, \$2,225,864 was expended to purchase \$2,992,538 par value of securities offered at an average price of 74.38. Court authorizations for the purchase of the additional \$225,864 of the securities was received on July 7.

SOUTHERN.—Abandonment.—This company has asked the Interstate Commerce Commission for authority to abandon a line extending from Statesville, N. C., to Taylorsville, 20 miles.

UNION PACIFIC.—Abandonment.—This company has asked the Interstate Commerce Commission in Finance Docket No. 13799 for authority to abandon that part of its Greeley branch extending from Barnesville, Colo., to the terminus of the line at Briggsdale, 13.4 miles; and that part of its Pleasant Valley branch extending from Galetton, Colo., to Purcell, 8.9 miles.

Previously the company had sought authority to abandon the Greeley branch extending from Greeley Junction, Colo., to Briggsdale, 26.2 miles; and its Pleasant Valley branch extending from Cloverly, Colo., to Purcell, 14.2 miles. By its amendment to the original application the company desires to reduce the mileage of the lines to be abandoned.

WABASH.—Abandonments.—This road has filed with the Interstate Commerce Commission applications seeking authority to abandon its 23.2 mi. branch line between Bement, Ill., and Sullivan, and its 4.8-mi. Stroh branch between Helmer, Ind., and Stroh. Both applications say that favorable action by the commission will release rails, fastenings and materials "for which there is an imperative demand elsewhere due to the existing state of war."

Dividends Declared

Virginian.—6 Per Cent Preferred, 37½¢, quarterly, payable September 24 to holders of record September 15.

Average Prices Stocks and Bonds

	Aug. 18	Last week	Last year
Average price of 20 representative railway stocks..	27.69	26.94	29.12
Average price of 20 representative railway bonds..	65.90	65.01	64.61

Railway Officers

EXECUTIVE

Robert F. Lanier, vice-president and general manager of the Chattahoochee Valley, has been elected president, with headquarters as before at West Point, Ga., succeeding **George H. Lanier**, resigned.

Gustav Metzman, chief of the Rail division, Transportation corps of the War Department at Washington, D. C., has been appointed assistant vice-president and general manager of the New York Central system, with headquarters at Cincinnati, Ohio, and with jurisdiction over the Big Four and the Peoria & Eastern. Mr. Metzman was born at Baltimore, Md., on June 23, 1886, and entered railway service with the Baltimore & Ohio on June 3, 1903, serving in various positions. He was supervisor of transportation with the Eastern Freight Accumulation Conference from



Gustav Metzman

March 18 to July 1, 1916, and from the latter date until February 1, 1917, he was supervisor of transportation with the Eastern Presidents Conference. He then became supervisor of passenger transportation of the B. & O. Mr. Metzman was on the staff of the Regional director, Eastern region, United States Railroad Administration from January 1, 1918, until February 1, 1920, at which time he was appointed chief car distributor of the B. & O. On March 16, 1920, Mr. Metzman entered the service of the New York Central as transportation assistant to the senior vice-president. He was promoted to the position of transportation assistant to the president on March 1, 1922, and on January 1, 1929, he was advanced to manager of freight transportation, with headquarters at New York. On February 1, 1940, he was promoted to assistant vice-president, with headquarters at Chicago, and in March, 1942, he was appointed chief of the Rail division, Transportation corps of the War Department at Washington.

Russell L. Snodgrass, assistant general counsel of the Reconstruction Finance

Corporation, will become vice-president in charge of finance and corporate relations of the Baltimore & Ohio on September 1. Mr. Snodgrass was born at Young's Cove, N. B., on August 4, 1898. He received a B.A. degree from the University of New Brunswick, Fredericton, N. B., in 1918, an



Russell L. Snodgrass

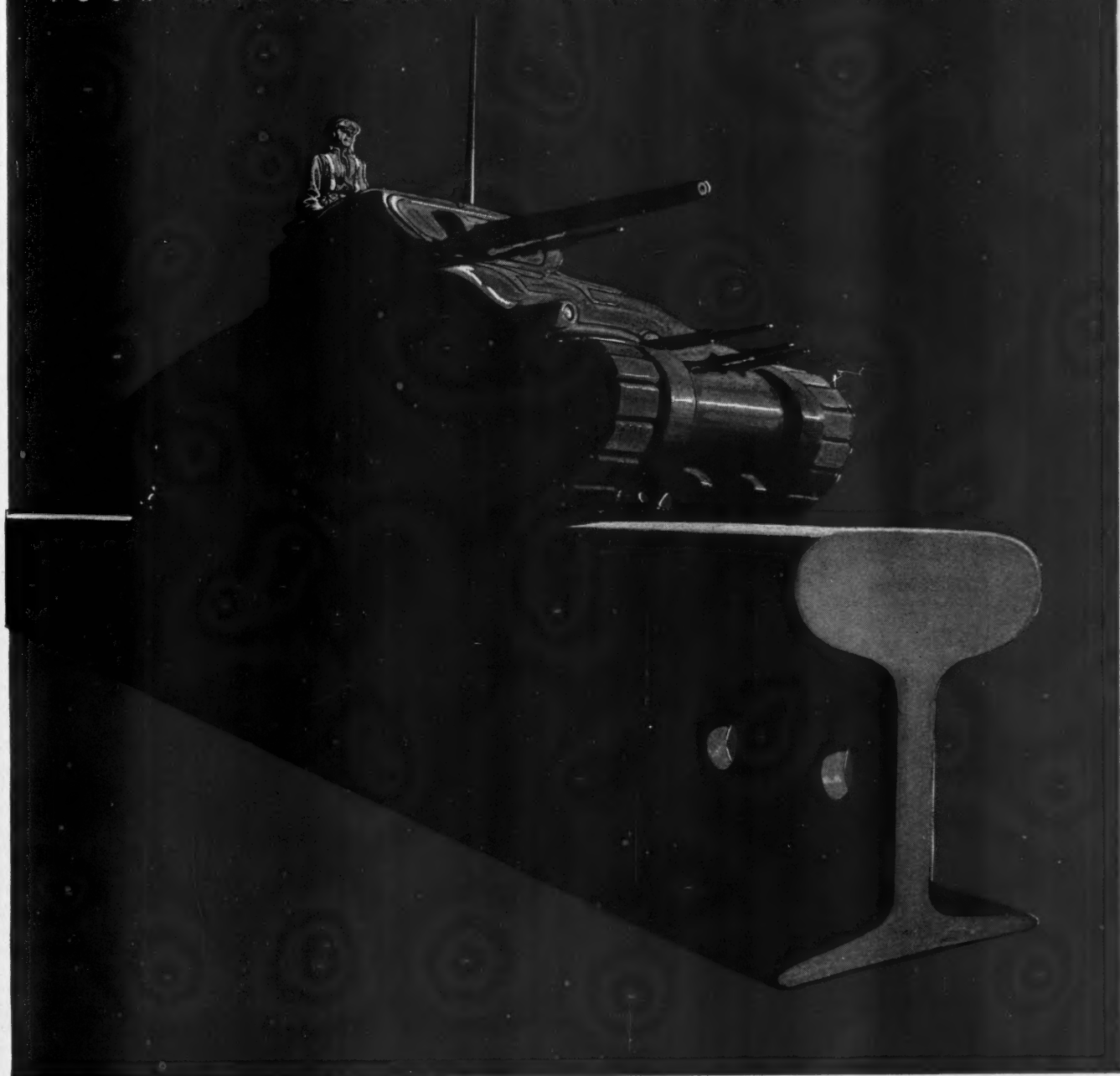
LL.B. degree from Dalhousie university, Halifax, N. S., in 1925, and an S.J.D. from Harvard university, Cambridge, Mass., in 1926. Mr. Snodgrass served with the Canadian Expeditionary Forces from 1918 to 1919, and upon his return to North America taught in Canadian schools until 1923. In 1926, he joined the law firm of Winthrop, Stimson, Putnam & Roberts, New York. In 1931, he became a citizen of the United States, and in 1932 was admitted to the New York Bar, later being admitted to the bar of the Circuit Court of Appeals and the United States Supreme Court. Mr. Snodgrass left Winthrop, Stimson, Putnam & Roberts in 1932 to become counsel on the staff of the Reconstruction Finance Corporation. He was appointed assistant general counsel in 1935, and was for a time in charge for the R. F. C., of the liquidation of loans to banks, insurance companies and building and loan associations. Later he became reorganization manager of the Wabash and of the Chicago & North Western, and has had an active part in nearly all the major railroad reorganizations now pending before the Interstate Commerce Commission and the Federal courts. Mr. Snodgrass is a director of the Export Import Bank of Washington, of the Metropolitan Casualty Insurance Company of New York, and of the Globe & Rutgers Fire Insurance Company and of First Trust & Deposit Company of Syracuse, N. Y.

OPERATING

C. S. Cannon, director of personnel of the Seaboard Air Line, with headquarters at Norfolk, Va., has been appointed chief of personnel. **J. S. Riggan** has been appointed assistant chief of personnel, and **H. Schaefer** has been appointed assistant to chief of personnel.

J. A. Appleton, general manager of the Long Island and of the New York zone

YOUR WAR BONDS HELPED BUILD THIS TANK



For one hundred years, suppliers of MOBILE POWER for American railroads, the world's greatest transportation system. Now, also suppliers of MOBILE POWER for the world's greatest mobile army. A century of engineering and production "know-how"...helping to turn the tide of mechanized warfare.

AMERICAN LOCOMOTIVE

A NATIONAL ARSENAL OF MOBILE POWER

TANKS • GUN CARRIAGES • ARMY AND NAVY ORDNANCE • STEAM-LINERS AND DIESEL-LINERS

of the Pennsylvania, with headquarters at New York, has been given a leave of absence by these roads to serve as chief of the Rail division of the Transportation Corps, United States Army, with headquarters at Washington, D. C. **Herman T. Frushour**, general superintendent of the Central region of the Pennsylvania, with headquarters at Pittsburgh, Pa., has been appointed general manager to succeed Mr. Appleton.

D. K. Chase, general superintendent of the Eastern Ohio division of the Pennsylvania, has been transferred to the Western Pennsylvania division, with headquarters as before at Pittsburgh, Pa., succeeding **H. T. Frushour**, whose appointment is noted elsewhere in these columns. **H. T. Cover**, superintendent of freight transportation of the Eastern region with headquarters at Philadelphia, Pa., has been appointed to succeed Mr. Chase, while **J. A. Schwab**, superintendent, Buffalo division, with headquarters at Buffalo, N. Y., will succeed Mr. Cover. **C. E. Alexander**, superintendent of the Monongahela division at Pittsburgh, Pa., has been transferred to the Buffalo division to succeed Mr. Schwab, and **H. D. Kruggel**, passenger trainmaster of the Middle division, has been appointed superintendent of the Monongahela division, succeeding Mr. Alexander.

Orvis Henry Osborn, whose promotion to superintendent of the Gulf division of the Gulf, Colorado & Santa Fe, with headquarters at Galveston, Tex., was reported in the *Railway Age* of August 8, was born at Chanute, Kan., on January 31, 1907, and studied a correspondence school course in law for four years. He entered railway service on May 26, 1926, as a stenographer in the office of the division superintendent of the Atchison, Topeka & Santa Fe at Chanute and was transferred to the Panhandle & Santa Fe at San Angelo, Tex., two weeks later, as secretary



Orvis Henry Osborn

to the assistant engineer, later serving successively as secretary to the assistant superintendent and chief clerk to the trainmaster at San Angelo, stenographer in the superintendent's office and secretary to the superintendent at Slaton, Tex., and secretary to the superintendent at Pueblo, Colo.

On April 1, 1937, he was promoted to transportation inspector at Dodge City, Kan., and on October 14, 1938, he was advanced to trainmaster of the Slaton division at San Angelo. Mr. Osborn was then transferred successively to Slaton and El Paso, Tex., and on December 15, 1941, he was promoted to acting superintendent of the Gulf division of the G. C. & S. F., with headquarters at Galveston, which position he held until his recent promotion, effective July 1.

H. J. Main, superintendent of transportation of the Western lines of the Canadian Pacific, with headquarters at Winnipeg, Man., has been appointed general superintendent of transportation, succeeding **George T. Coleman**, who, after 49 years of service, will retire on September 1.

Mr. Main was born in Kemptville, Ont., and entered railroad service with the Canadian Pacific in 1902 as night operator at Almonte, Ont. After serving at many points, he became assistant superintendent at Smith's Falls, Ont. Mr. Main has also served as relieving superintendent, first at Brownville Junction, Me., and then on the Laurentian division, subsequently becoming



H. J. Main

car service agent under the general superintendent of the Quebec district. In 1922 he was appointed superintendent of the Trenton division, with headquarters at Toronto, Ont., being transferred to the Moose Jaw division in 1927 and to Saskatoon, Sask., in 1930. Mr. Main became general superintendent at Winnipeg in 1934, and in 1938 was transferred to Moose Jaw, Sask. In October, 1941, he was appointed superintendent of transportation of the Western Lines at Winnipeg, which position he retained until his recent appointment.

Mr. Coleman was born at Carleton Place, Ont., in 1875. He entered the service of the Canadian Pacific in May, 1893, as agent and operator on the Lake Superior division and served as dispatcher, chief train dispatcher, assistant trainmaster, and trainmaster in Chapeau, Ont., Carleton Place, Sudbury, Revelstoke, B. C., White River, Ont., Medicine Hat, Alberta, Moose Jaw, Sask., Regina, and Winnipeg, Man. In January, 1915, Mr. Coleman was promoted to car service and fuel agent at Moose Jaw and in the following year he became car service agent at Toronto. In

November, 1918, he went to Montreal as inspector of transportation, and in December, 1930, was appointed superintendent of transportation at Montreal. Mr. Coleman was appointed general superintendent of transportation for the system in January, 1936.

FINANCIAL, LEGAL AND ACCOUNTING

Drennan J. Slater, formerly with the law firm of Nelson, Slater & Boodell,

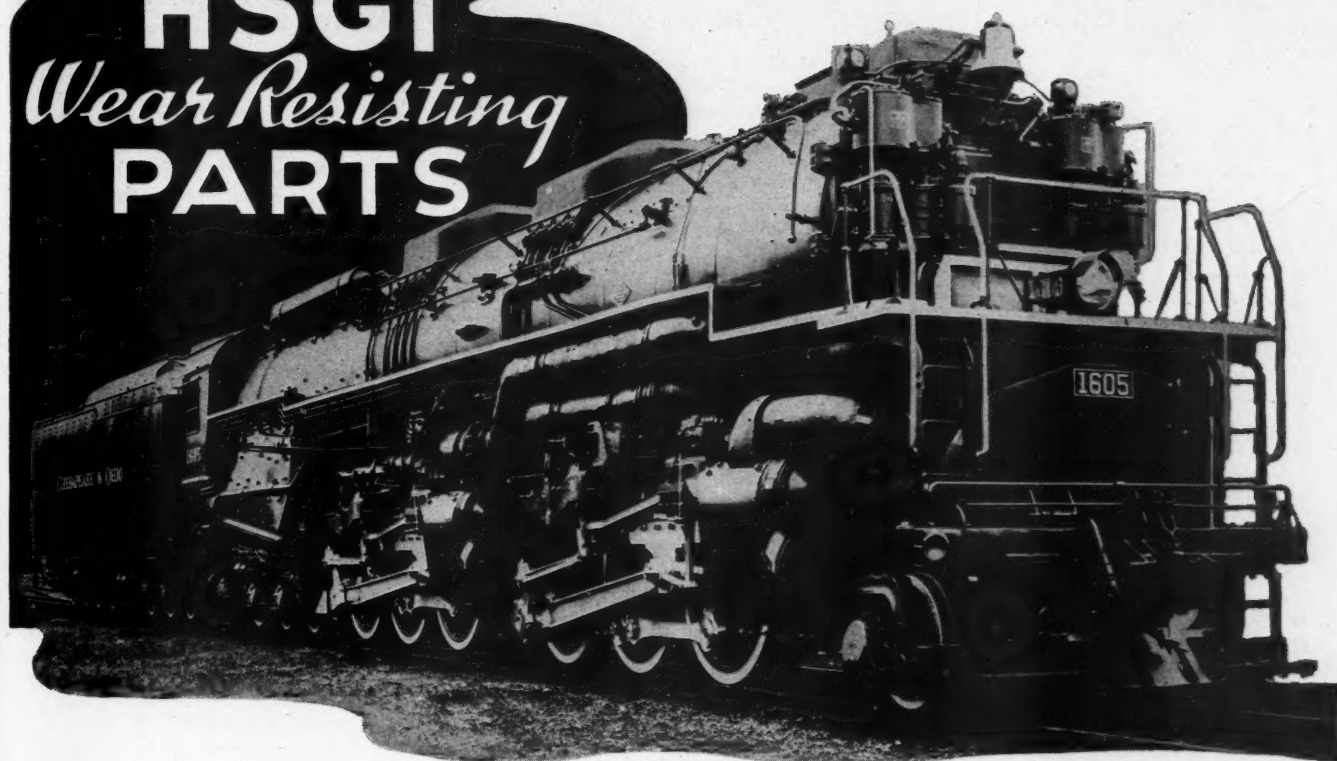


Drennan J. Slater

Chicago, has been appointed general attorney of the Chicago & North Western, with headquarters at Chicago, effective August 17. Mr. Slater was born in Chicago and graduated from Dartmouth College and Northwestern University Law School. In 1928 he was admitted to the Illinois bar and began the practice of law. The following year, he became a member of the law firm of Bangs, Crane & Slater and in 1937 joined the firm of Nelson, Slater & Boodell. In 1933 Mr. Slater was elected a member of the Illinois General Assembly, serving until 1941.

Joseph A. McClain, Jr., who recently resigned as dean of the Washington University School of Law, St. Louis, Mo., has been appointed assistant general counsel of the Terminal Railroad Association of St. Louis, and, effective October 1, will be advanced to general counsel, succeeding **Carleton S. Hadley**, vice-president and general counsel, who has resigned, effective that date, to fill an executive position with one of the larger railroads having headquarters in St. Louis. Mr. McClain, who is 39 years of age, graduated from Mercer and Yale Universities and was engaged in general law practice for a few years with the firm of Slade and Swift at Columbus, Ga. From 1926 to 1933, he was professor of law at Mercer University, where he was acting dean for two years and dean from 1927 to 1933. After serving briefly as professor of law at the University of Georgia, he was appointed dean and professor of law at the University of Louisville in 1934, and in 1936 he was appointed dean and professor of law of the School of Law of Washington University. Mr. McClain has been active in civic activities in the St. Louis area and has served as chairman of the St. Louis Citizens' com-

HSGI *Wear Resisting* PARTS



Increase Operating Efficiency

LOCOMOTIVES equipped with wear-resisting parts made from HUNT-SPILLER *Air Furnace* GUN IRON are particularly outstanding for their high operating efficiency.

Performance records show high availability—economical fuel consumption and low maintenance.

In other words, the wear-resisting properties of HUNT-SPILLER *Air Furnace* GUN IRON help to assure maximum revenue mileage at a minimum operating cost.

HUNT-SPILLER MFG. CORPORATION

V. W. Ellet, President

E. J. Fuller, Vice-Pres. & Gen. Mgr.

383 Dorchester Ave. Office & Works South Boston, Mass.

Canadian Representative: Joseph Robb & Co., Ltd., 5575 Cote St. Paul Rd., Montreal, P. Q.

Export Agent for Latin America:

International Rwy. Supply Co., 30 Church Street, New York, N. Y.

HSGI

Reg. U.S. Trade Mark

Cylinder Bushings
Cylinder Packing Rings
Pistons or Piston Bull Rings
Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings

Finished Parts

Dunbar Sectional Type Packing
Duplex Sectional Type Packing
for Cylinders and Valves
(Duplex Springs for Above
Sectional Packing)
Cylinder Snap Rings
Valve Rings All Shapes
Light Weight Valves
Cylinder Liners and Pistons
for Diesel Service

HUNT-SPILLER GUN IRON

Air Furnace

mittee; member of the board and president of the Social Planning Council of St. Louis and St. Louis county; member of the board of directors of the Missouri Welfare league; member of the board of directors of United Charities of St. Louis and St. Louis county; member of the Supreme Court committee of Missouri to recommend changes in code procedure; chairman of the Alien Enemy Hearing Board for the Eastern district of Missouri; and chairman of the Advisory committee for the St. Louis Public Defender bureau. Mr. McClain is also a trustee of Shurtleff college at Alton, Mo.

ENGINEERING & SIGNALING

H. A. Hulse, Jr., signal draftsman of the Denver & Rio Grande Western at Denver, Colo., has been promoted to assistant to the signal engineer, with the same headquarters, succeeding **C. R. Holmberg**, assigned to other duties.

TRAFFIC

Edward R. Morris, freight traffic manager of the New York, Ontario & Western, has been granted a leave of absence to assume a lieutenant-colonelcy in the Quartermaster Corps, Traffic division, War Department, with headquarters at Washington, D. C.

Oliver J. Williford, Jr., assistant general freight agent of the Illinois Central, with headquarters at Chicago, has been promoted to the newly created position of assistant manager of foreign freight traffic, with the same headquarters. Mr. Williford was born at Memphis, Tenn., on August 1, 1899, and studied the Alexander



Oliver J. Williford, Jr.

Hamilton Institute business course. He entered railway service on September 17, 1915, as a messenger in the office of the general freight agent of the Illinois Central at Memphis, later being advanced through several positions to chief clerk to the general freight agent at Memphis. On February 20, 1932, he was promoted to chief of the tariff bureau at Chicago and in 1934 he was appointed office manager at Chicago. Mr. Williford was advanced to assistant general freight agent, with headquarters at Chicago on November 1,

1936, which position he held until his recent promotion effective August 16.

MECHANICAL

H. M. McKay has been appointed electrical engineer of the Central of Georgia with jurisdiction over all electrical departments and the air conditioning of passenger cars. His headquarters will be Savannah, Ga. The position of engineer air conditioning and car lighting has been abolished.

OBITUARY

James H. Leary, assistant to the general manager of the Western Pacific, with headquarters at San Francisco, Cal., died in that city on August 10. Mr. Leary was born at St. Helena, Cal., on March 20, 1876, and entered railway service in 1890 as a call boy on the Southern Pacific, later being advanced successively to telegraph operator, agent, train dispatcher, chief dispatcher and trainmaster. In 1910 he went with the Central California Traction Company as superintendent at Stockton, Cal., and in 1913 he became superintendent of the Oakland, Antioch & Eastern at Oakland, Cal. Mr. Leary went with the Western Pacific in 1916 as assistant superintendent of the Western division, with headquarters at Stockton, and in 1920 he was promoted to superintendent of that division, with headquarters at Sacramento, Cal. In January, 1942, he was appointed assistant to the general manager, with headquarters at San Francisco.

Herman B. Earling, formerly vice-president of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Seattle, Wash., who retired on June 15, 1941, as special representative, with the same headquarters, died of pneumonia at his home in Seattle on August 17. Mr. Earling was born on October 30, 1862, and entered railway service in 1879 as an agent and operator on the Milwaukee, later serving as an assistant train dispatcher and chief dispatcher. In 1893 he was promoted to trainmaster and four years later he was advanced to superintendent of terminals. Mr. Earling was appointed division superintendent at Marion, Iowa, in 1898, and in 1903 he was advanced to assistant general superintendent at Milwaukee, Wis. In 1906 he was transferred to Minneapolis, Minn., and the following year he was promoted to general superintendent of the Chicago, Milwaukee & Puget Sound (part of the C. M. St. P. & P.), with headquarters at Miles City, Mont., and Butte. In 1909 he was appointed general superintendent of the Milwaukee at Chicago and in February, 1912, he was advanced to assistant general manager with the same headquarters. In January, 1913, Mr. Earling was elected vice-president, with headquarters at Seattle. His title was later changed to western representative.

Richard H. Tuttle, who retired as superintendent of the Los Angeles division of the Atchison, Topeka & Santa Fe, with headquarters at San Bernardino, Calif., on February 1, 1934, died in Los Angeles, Cal., on August 11. Mr. Tuttle was born

at Milan, Mich., on November 11, 1862, and entered railway service in 1879 as a night telegraph operator of the Detroit, Hillsdale & Southwestern (now part of the New York Central), later serving as a clerk of the Michigan Central at Chicago, as a clerk and operator of the St. Paul, Minneapolis & Manitoba (now part of the Great Northern), as a train dispatcher of the Union Pacific at Como, Colo., and a dispatcher of the St. P. M. & M. at Barnesville, Minn. On January 6, 1890, he went with the Santa Fe as train dispatcher at Marcelline, Mo. In May, 1901, he was transferred to the Coast lines as chief dispatcher at Fresno, Cal., and in August of that year he was promoted to trainmaster at that point. On January 20, 1906, he was transferred to Needles, Cal., and on July 6, 1906, he was promoted to superintendent at that point. In April, 1913, he was transferred to Winslow, Ariz., and in January, 1920, he was transferred to the Los Angeles division, with headquarters at San Bernardino, which position he held until his retirement.

Waller Stokes, general counsel of the Tennessee Central, with headquarters at Nashville, Tenn., died at his home in that city on August 15.

Mark W. Potter, whose death on August 12 was reported in the *Railway Age* of August 15, page 292, was born at Kaneville, Ill., on January 9, 1866. He was educated in the high school at Aurora, Ill., and New York University Law School, and was for a time a member of the law firm of Hornblower, Miller, Garrison & Potter in New York. In 1905, Mr. Potter became counsel for the Carolina, Clinchfield & Ohio. Two years later he was elected chairman of the board and in February, 1911, he became president of the road. He resigned from the presidency on June 24, 1920. In May, 1920, President Wilson nominated Mr. Potter for appointment to the Interstate Commerce Commission. No action was taken by the Senate at that time but Mr. Potter served under recess appointment until March 11, 1921, when the nomination was resubmitted to the Senate and confirmed on March 12, 1921. During the time he served as commissioner for the I. C. C., Mr. Potter was active in car service matters and later was a member of Division IV, dealing with financial matters within the Commission's jurisdiction. He resigned from the I. C. C. on February 20, 1925, and was succeeded by Thomas F. Woodlock. In April, 1925, Mr. Potter was appointed receiver for the Chicago, Milwaukee & St. Paul and served in that capacity until January, 1928, when the road was reorganized. During this period the so-called "Potter plan" for an increase in Western freight rates, to be pooled and divided so that the weaker roads in the Northwest received the maximum benefit, was put forth. Mr. Potter was also associated with John W. Barriger, III, in 1933 in setting up the "Prince plan"—a method of regional railroad consolidation which was presented to governmental authorities and widely discussed. At the time of his death Mr. Potter was president of the Pennsylvania Coal & Coke Corp.